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# USSR Report

TRANSPORTATION

No. 63



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AIR

#### ANTONOV DESIGN BUREAU'S ACHIEVEMENTS

Kiev RADYANS'KA UKRAYINA in Ukrainian 23 Oct 81 p 3

[Article by M. Khriyenko: "A Meeting with the Creator of the "ANs"]

[Text] The introduction of new aircraft in the national economy was the theme of the recent meeting with the aviation design bureau's general designer O. K. Antonov at the press conference of republic newspaper, radio, and television journalists.

O. K. Antonov, a Hero of Socialist Labor and winner of the Lenin Prize, informed the journalists about the work of his collective in the creation of the new AN-3, AN-28, AN-72, and the modified AN-32 aircraft. These aircraft will begin operation during the Eleventh Five-Year Plan. In discussing the creative achievements of the design bureau, Oleh Kostyantynovych offered facts and figures. For example, the productivity of the new AN-3, in comparison with the AN-2, will increase one and a half times and the cost price of aviation chemical work production will decrease by 25-30 percent. The complex of latest pilot-navigational and radio communication equipment provides the AN-28 with a high degree of safety in day-time and nighttime flying. The AN-72 jet cargo aircraft is distinguished by its very short take off and landing requirements and considerable roadability. This permits its operation on unpaved and snow-covered runways.

The film which the aircraft designers showed the journalists depicted the work of civil aviation test pilots. After seeing the film, one is again persuaded that the great AN aviation fleet will soon be complemented with excellent aircraft that will do much good in the national economy of our Fatherland.

CSO: 1811/10

PROPOSED CHANGES IN MOTOR VEHICLE REPAIR ADMINISTRATION

Moscow AVTOMOBIL'NAYA PROMYSHLENNOST' in Russian No 9, Sep 81 pp 1-4

[Article by Candidates of Technical Sciences B. K. Buravtsev, S. K. Buravtsev, I. K. Del'tsov and V. S. Klanitsa (NAMI [Central Scientific Research Institute of Automobiles and Automobile Engines]): "Major Overhauls of Automotive Equipment -- On an Industrial Basis"]

[Text] The effectiveness of motor transport in the national economy is determined not only by the level of reliability of the vehicles being produced, but also by the quality of maintenance on them, especially major overhauls. At the same time, experience testifies to the fact that automotive repair still lags behind production, foremost in terms of quality and net cost. For example, in many instances, the operating life of rebuilt engines does not exceed 30-40 percent that of new engines, but the net cost reaches 90 percent that of new ones.

One of the basic reasons for this is the departmental fragmentation and scattering of automotive repair enterprises: at present, practically every ministry and many departments have their own structure, either associations or plants or shops to repair automobiles, engines or other units, and some even have their own scientific research organizations dealing with repair problems.

This kind of repair subdivision structure understandably cannot be on a large scale. And in fact, there are now about 900 repair plants doing major overhauls in the country, more than 75 percent of which have work programs of less than 500 listed major overhauls per year. All these repair enterprises belong to more than 40 ministries and departments. Naturally, given such fragmentation of repair organizations, it is not possible to speak of a unified technical policy in the area of major overhauls of automotive equipment or of specializing repair enterprises, a unified, progressive repair technology, standards for the production and use of means of automation, and so forth. As a result, in the course of automotive repairs, a significant portion of the subassemblies and parts which a shop cannot rebuild itself are replaced with new parts, and some of the rebuilt assemblies arrive for installation with deviations in sizes and working-surface quality which do not fall within allowable specifications.

Moreover, given the present organization of repairs, automotive repair enterprises are little interested in work on increasing the operating life of the equipment they rebuild, inasmuch as the system of reciprocal calculations which has evolved between them and motor transport enterprises, based on the "part for part" system, and the

necessity of carrying out the planned yearly major overhaul program at any cost make the problem of quality one of secondary importance. For this same reason, repair plants often accept for major overhaul not repairable items, but items which can be written off, but which can in no way be rebuilt.

A large share of the blame for substandard repair stocks also belongs to motor transport enterprises: a frequent cause of damage to units and subassemblies is the failure to follow rules for technical operation (overloading, failure to replace lubricants at the proper time or to use quality lubricants, use of inappropriate oils and fuels, failure to tighten important threaded fasteners to required torques, poor quality of technical servicing and routine maintenance, incomplete service, failure to maintain proper heat conditions, and so forth).

However, it would be incorrect to maintain that poor-quality major overhaul of vehicles and their assemblies as is observed at many repair enterprises, and especially small ones, is a reflection of the essence and potential of vehicles repair production.

The experience of leading domestic automotive repair plants and models of effective automotive subassembly major overhaul organization by certain large foreign automotive companies testifies to the fact that it is entirely feasible and economically advantageous to ensure a between-repairs service life of overhauled units which is close to that of new items. Major overhaul permits the full use of the remaining life of parts and the more economical expenditure of national economic funds, metal and fuel-energy resources in particular. Thus, for example, expenses associated with using salvagable parts for repairs are less than 10 percent of the listed prices of new parts, and parts repair and rebuilding expenses are 30-50 percent the net cost of manufacturing them. It is also advantageous from the viewpoint of saving metal: expenditures on materials for rebuilding parts are dozens or hundreds of times lower than for their manufacture (1). Calculations show that rebuilding 60,000 crankshafts for 150-kW motors could save more than 1,200 tons of high-quality metal (2).

It follows from the above that creating an efficient automotive equipment major overhaul organization and seeking out ways and means of improving the quality and efficiency of repairs should be viewed as a most important national economic task now.

The economically most justified and appropriate way of improving the efficiency and quality of automotive subassembly major overhaul is to concentrate and specialize automotive repair production and shift it to an industrial base. If this is done, all automotive repairs will be subordinated to a unified technical policy whose legislator would be the automotive industry in the person of automotive equipment manufacturing plants, and it will become possible to use in major overhaul the technological processes and equipment used in automobile manufacture.

It is appropriate to resolve the task of industrializing automotive repair in stages. In the first stage, we should create pilot-model subassembly major overhaul plants under the lead automobile manufacturing plants. These plants would work out a unified repair technology ensuring a service life for overhauled parts of at least 80-90 percent that of new units and would themselves become a sort of lead plant. The design-technological repair documentation developed could be legislatively extended to cover all renovated automotive repair enterprises. In the second stage, when new automobile models are being mastered, we should create company subassembly and parts major overhaul organizations attached to production associations.



Work has been done along this line for a number of years now. The largest branch plants (ZIL, KamAZ, YaMZ, GAZ, ZMZ and others), together with scientific research and planning institutes (NAMI, NIITavtoprom and others) have developed design and technological documentation for the major overhaul of automobile units; a plant is being built for the major overhaul of YaMZ [Yaroslavl' Motor Plant] motors; planning work on renovating and outfitting a plant for the major overhaul of ZIL-130 power plants is being completed; we have begun building a power plant major overhaul plant, the largest in Europe, for KamAZ [Kama Motor Plant] automobiles. ZMZ-53, ZIL-130, GAZ 52-04 and YaMZ-238 motors have been overhauled, on an experimental basis, using repair documentation worked out by branch enterprises and organizations. They all have passed dependability tests at the level set by the All-Union State Standard.

Other specific steps being undertaken along this line by individual plants of the Ministry of Automotive Industry are detailed in works (2) and (3).

All the experience accumulated to this point shows that the major overhaul of automotive equipment on an industrial basis is possible only given unified repair design-technological documentation and unified, specialized equipment and fittings, that is, at a standard, typical enterprise which is as a rule subordinate to a branch production association or operates on a contractual basis, conducting the technical policy of the manufacturing plant. Only at such an enterprise is it possible to institute substantiated parts shift-index coefficients, that is, to objectively plan the expenditure of spare parts for the major overhaul of units and subassemblies.

By creating a company units and subassemblies major overhaul organization, the proposed strategy for organizing automotive equipment major overhaul on an industrial basis will increase the responsibility of manufacturing plants for the level of reliability of items being produced throughout the entire operation cycle, as well as for the quality of repairs on them through actualization of the principles of the organizational and technological continuity of automobile building and repair (more accurately, "repeat") production. And spare parts would also be used more efficiently.

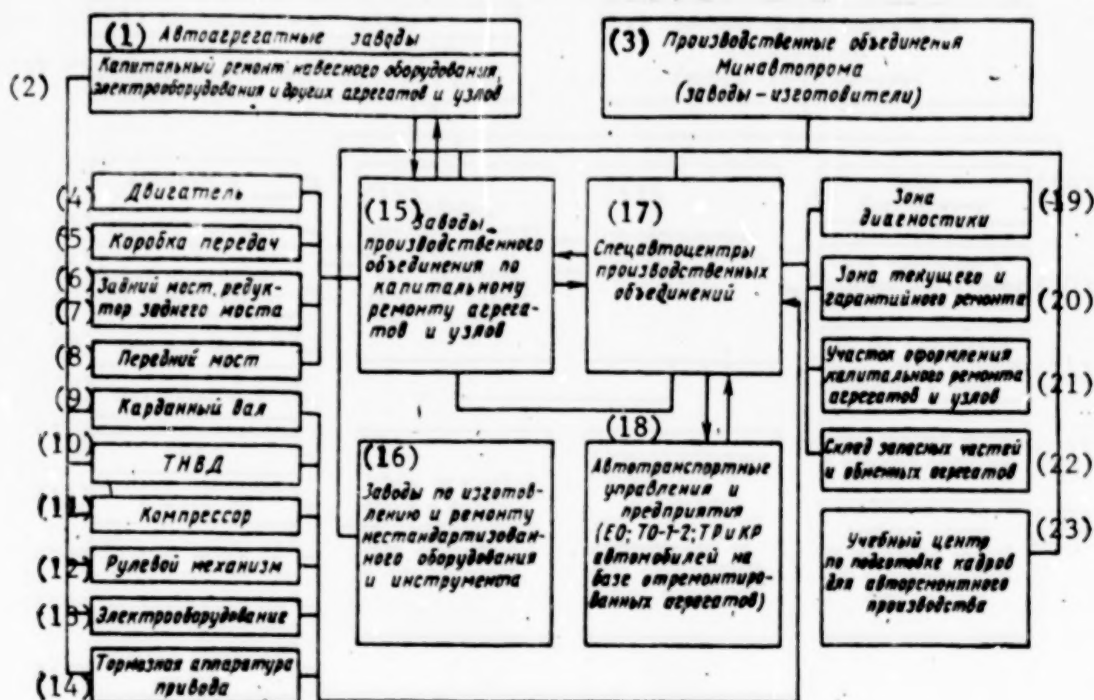
Company automobile parts major overhaul organization will permit the flexible use of "operation - plant" feedback for the purposes of improving automotive equipment quality and improving its fitness for repair at the planning, production and modernization stages, and it will increase the prestige of the manufacturing plant, since the repair of units, subassemblies and parts which is done by small, low-capacity shops and automotive repair plants which do not always have sufficient skilled specialists available to them discredits the quality of the items being produced (due to frequent failures, low service life between repairs and high operating-repair expenditures).

When organizing automotive repair production on industrial principles as part of production associations, we should anticipate the creation of study centers to train and retrain personnel for automotive repair enterprises.

When organizing automotive equipment major overhaul using industrial methods, we need to refine the very concept of "major overhaul." Automotive parts major overhaul should obviously be taken to mean "re-production" using means and methods equal in precision to those used in basic production, with maximum re-use of parts with a guaranteed service life. Worn out parts, foremost base and basic ones, must be viewed as technological blanks on which the geometric parameters and physical-mechanical properties of the working (functional) surfaces must be restored to those of new parts, that is, so that, when installing them, they correspond to the norms and tolerances

set for new items. The service life of rebuilt base and basic parts must ensure a service life for the overhauled subassembly of at least 80 percent that of a new subassembly, and the net cost of the repair must be economically advantageous.

Possible Variant of Company Automotive Subassembly and Unit Major Overhaul Organization



Key:

1. Subassembly manufacturing plants
  2. Major overhaul of mounted equipment, electrical equipment and other units and subassemblies
  3. Ministry of Automotive Industry production associations (manufacturing plants)
  4. Motor
  5. Transmission
  6. Rear axle assembly
  7. Rear axle assembly reduction gear
  8. Front axle
  9. Cardan shaft
  10. TNVD [not further identified]
  11. Compressor
  12. Steering mechanism
  13. Electrical equipment
  14. Brake activating mechanism
  15. Production association plants for unit and subassembly major overhaul
  16. Plants manufacturing and repairing nonstandard equipment and tools
  17. Special production association automotive centers
  18. Motor transport administrations and enterprises (EO [daily service]; TO-1-2 [technical service]; R and KR [repair and major overhaul] of vehicles based on overhauled units)
  19. Diagnostic center
- [Continued on following page.]

20. Routine and warranty service center
21. Sector for drawing up documentation for major overhauls on units and subassemblies
22. Spare parts and replacement units warehouse
23. Study center for training automotive repair personnel

The basic links of the company system (see previous page) should thus be considered the creation at lead production association manufacturing plants of services to work out unified repair design-technological documentation and to improve the forms of unit and subassembly major overhaul organization; construction of pilot-model plants (shops) for major overhauls on units and subassemblies as part of production associations; creation of a broad network of specialized automotive centers; start-up of additional capacities at manufacturing plants or construction of plants to produce and repair highly efficient nonstandard equipment and complex fittings; organizing on an industrial basis the centralized rebuilding of worn out parts to then be used as spare parts; creation of a system to train and retrain highly skilled automotive repair personnel.

The technological basis of a company major overhaul organization must be a depersonalized, flow-line method of repairing and rebuilding basic and base parts using means equal to basic production (automobile building) in terms of tolerance norms, with maximum use of parts with residual service life sufficient to ensure a prescribed between-repairs service life. In this regard, parts rebuilding should be understood to mean that which will ensure a prescribed technological impact service life with a view towards ensuring recovery of the parts utility which has been lost beyond the limits regulated by normative-technical documentation. Centralized parts rebuilding should be taken to mean series or large-scale rebuilding as commodity output.

In company industrial repair, we obviously do not need direct links between motor transport enterprises and automotive repair plants. The specialized automotive centers will be the connecting link between them. It is those centers which must diagnose the technical condition of units and subassemblies and determine the appropriateness of overhauling them, set up the assembling (purchase) of repair stocks and market the overhauled units and subassemblies, supply consumers with spare parts and, when necessary, do routine repairs or adjustments on units and subassemblies. In other words, specialized automotive centers must become support points for conducting the technical policy of manufacturing plants.

In addition to the pilot-model plants created at production associations, we need a network of large company automotive repair plants in other regions of the country to meet the demands of specific regions for major overhauls on automobile units and subassemblies. In resolving questions of the territorial distribution of repair plants and specialized automotive centers, consideration should be given to the density of automobile distribution by model and intensiveness of their use in that particular zone.

In view of the inappropriateness of making major overhauls on a complete vehicle at repair plants, we could obviously permit, as an exception, the repair of complete vehicles at motor transport enterprises (technical service stations) on a base of finished units which have been rebuilt at repair plants. Spare parts must be provided in a centralized fashion, by the production associations.



In conclusion, let me note that, with a view towards improving the economic mechanism, introducing and developing a system of dynamic planning of the production program of repair plants (as a function of the actual receipt and availability of repair stocks), increasing material interest in releasing and retaining repair stocks which meet the demands of the repair documentation and improving major overhaul quality, it is appropriate to set up, in interrelations between repair production and clients, a system of independent calculations which includes, in particular, free purchase of repair stocks and sale of overhauled units. This is not a new idea, but it deserves the most serious attention.

Thus, the organization of company automotive equipment major overhaul on an industrial basis is a problem whose time has come, so it must be solved more quickly. In this lies the guarantee that the country's transport system will operate more efficiently and with better quality, that is, as is demanded by the resolutions of the 26 Congress of our party.

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## MOTOR VEHICLE

### ROAD SYSTEM'S POOR STATE EXAMINED

#### Situation in Rural Areas

Moscow IZVESTIYA in Russian 10 Oct 81 p 3

/Article by IZVESTIYA correspondent A. Sabirov (Kazan'): "The Lack of Roads Is an Enemy of the Economy"

/Text/ Village inhabitants, when they gather to spend the evening and talk, have three indispensable topics of conversation: international life, the weather for tomorrow and the local roads. In our country everyone examines foreign events, no one can predict the weather changes properly, while everyone has roads, like a headache. It is annoying, tormenting, but there is no way to control it.

Oh, the roads. From whom of us has this sigh not escaped since we were children? My father was a rural physician. The work, as is known, is very troublesome. You are on your feet the entire day--rounds, office visits, examinations. And at night the physician hurried to patients usually on horse, often on his own two feet. And he served a district consisting of 15 villages. For the most part the very ones which later through carelessness or misunderstanding began to be called unpromising. The life of many people depended on when the doctor would get to them on time or would be late. And in our district, it can be said, there were no roads at all--neither good nor bad.

Even now there is nothing to boast of.

Of course, of course, roads are being built in Tataria. The length of republic and local hard surface roads during the 10th Five-Year Plan increased by 1,260 km, of them a little less than 1,000 km are covered with asphalt or concrete. In all 104 bridges with a total length of 5,200 m were thrown over rivers and other obstacles. Another 118 center farmsteads of kolkhozes and sovkhoses received a way out of the backwoods.

I can imagine how the people in these villages rejoiced at the long-awaited appearance of the road. And not because people fond of rapid travel nearly always live here. The reason here is of a more specific prosaic nature. Once the road has come, life should change. Since without it there is no and, perhaps, can be no normal life. To say nothing about total modern comfort.

"A truly agro-industrial complex is inconceivable without a developed infrastructure, including reliable transportation service," First Secretary of the Tukayevskiy Rayon Party Committee Yu. Kurmashev emphasizes. "It is the roads that have helped us to launch production and housing construction on an extensive scale and to speed up land reclamation."

It was said long ago: a strong farm grows along a good road. And, very likely, the number of smiles per person also increases appreciably. It is to the people's liking that the assortment of goods in the stores is becoming more and more diverse and they are brought in without any interruptions. Personal service specialists--experienced barbers and hairdressers, cutters and experts in other lines--arrive on time. The school children from small villages are brought to classes in special buses. The same movies are shown on the wide screens at the rural clubs as in the movie theaters of the capital. And if a person becomes sick, medical help is given to the patient immediately.

But Tukayevskiy Rayon, why pretend, was lucky--the Kama Motor Vehicle Plant rose on its territory. This construction project, of course, also influenced the suburban agricultural zone. But in the majority of other rayons such fine conditions still do not exist. Take if only Verkhneuslonskiy Rayon, which is located on the right bank of the Volga. Asphalt also appeared here recently. However, the well-built section in the direction of Apastovo is short, while it is simply dangerous to drive off it.

Our cross-country vehicle hurried, straining the iron heart, but uselessly: we were not able to get to our destination before dark. The numerous potholes and the completely broken ruts did not allow our vehicle to pick up speed. We constantly came across stuck trucks which spun their wheels desperately, but did not move an inch. Some of them, loaded with agricultural products, had slipped completely into the ditch and fallen over on their side. Sugar beets, which in autumn are hauled from this entire region to the Binskiy Refinery, were scattered everywhere.

Not without reason is there not one farm in Verkhneuslonskiy Rayon, which has in some way made ends meet.

"At times there is simply nothing we can do about impassable roads," admits A. Belyayev, deputy chairman of the executive committee of the rayon soviet of people's deputies. "All transport comes to a standstill, and only powerful tractors support the little bit of traffic."

If we believe the reports, Tataria is in far from last place in the RSFSR in the development of the road system, it is even above average. However, of all the republic and local roads only 21.2 percent have an improved surface. While on the intrafarm roads, the length of which exceeds 8,000 km, 71 km, that is, less than 1 percent, are covered with asphalt.

The business of building roads, unfortunately, is not going too smoothly. Let us take the same Verkhneuslonskiy Rayon. During the past five-year plan with a assignment of 32.9 km the addition with a hard surface was only 8.9 km. And at present the work is being performed fair to middling. The fulfillment of the plans is again being upset.

Recently there was a serious discussion of the roads of Tataria in the oblast party committee. It was emphasized that the building in the republic of such a mighty automotive complex as KamAZ is making greater demands on road construction. Soon the country will receive the 300,000th Kama truck. During the 11th Five-Year Plan it is planned to produce not less than 600,000 KamAZ trucks.

"Our vehicles need quite good roads," says V. Barun, chief designer of the truck. "They are designed for long-term and highly efficient operation. We intend to increase the kilometerage to 500,000 km. The indicator is a record one, but, in our opinion, a quite realistic one. But under the conditions of the lack of roads or poor roads it is hardly attainable. Therefore it is necessary to support the increase of the production of heavy trucks with the more rapid building of a modern road system."

Do the road builders take these requirements into account in their plans? For example, in 1981 the Tatavtodor Trust should put into operation 278 km of new roads. But of them only 82 km have an asphalt and concrete surface. The remainder, hence, are gravel and macadam roads. So-called white roads. In durability and performance characteristics they are much worse than roads with a black surface. No sooner do vehicles begin to travel over them than it is necessary to patch the too weak road surfacing. The life in practice does not exceed 3 years, and at times 1 year. Heavy vehicles and tractors literally grind them, turning them into impassable roads.

In addition to the Tatavtodor Trust, in the republic the Dorkolkhozstroy Trust is also engaged in the laying of roads. On the orders of kolkhozes and sovkhoses it builds intrafarm roads. Alas, of even lower quality. The cost of 1 km of them can in no case exceed, by instruction, 100,000 rubles. Therefore, everything is done in a simplified version--the earth roadbed is a bit weaker, the road surfacing is a bit thinner, the development is a bit less expensive. As a result even two trucks cannot pass on such a road. And if loaded KamAZes and Kirovetses begin to run over it constantly, the new road is immediately turned into mash.

"I believe that the prevailing norms and regulations for the construction of roads to a considerable extent are obsolete," says M. Samigullin, first secretary of the Aktanyshskiy Rayon Party Committee. "What sense does it make to lay at farms roads, let us say, of the fifth category? According to the technical condition they do not stand up not only to a modern load, but also to elementary criticism. They are trying to persuade us that such roads are being built in order to save financial assets and material resources. But I will state frankly: there is nothing more wasteful than economizing on roads. Not without reason is a good road depicted with a ruble rolling over it. In the opinion of specialists, in Tataria due to the lack of roads the annual damages from the losses of agricultural products, the premature wear of equipment and excessive fuel consumption exceed 100 million rubles (and these are far from the complete estimates). Is this really spare money?"

The lack of roads is an enemy of the economy. And, of course, not of Tataria alone. According to the data of the RSFSR Ministry of Roads, in roadless regions the transportation costs in the production cost of agricultural products amount to 40-47 percent and frequently the cost of delivery exceeds the receipts of the farms from the sale of products. Whereas 1 ton-kilometer of truck transportation over modern highways costs 2-3 kopecks, over dirt roads it costs a total of



15-20 kopecks. But the volumes of this traffic come not to millions, but to billions of ton-kilometers.

"There cannot be two opinions here," asserts Hero of Socialist Labor R. Zagidullin, a deputy of the Supreme Soviet of the autonomous republic and a driver of the transportation administration. "Believe the experience of a man who has been behind the wheel for a good three decades. The entire world must undertake road construction and must perform it on a modern scale."

Yes, everyone needs roads. And everyone should participate in their construction. However, many enterprises in practice are not doing anything and at best confine themselves to the allocation of a small amount of capital. For example, during the 10th Five-Year Plan the proportion of participation in kind for the city rayons of Kazan' was stipulated in the amount of 7.5 percent in all, while in fact it was only 1.57 percent. This matter was unsatisfactorily organized in the same Verkhne-usslonskiy, as well as Al'keyevskiy, Drozhzhanovskiy, Agryzskiy, Laishevskiy, Vysokogorskiy, Aksubayevskiy and several other rayons.

Or take the following example. Decisions on stepping up the rate of road construction have been repeatedly adopted in the republic. In particular, it was envisaged to establish jointly special road construction detachments following the example of Vladimirskaia, Sverdlovskaya and other oblasts. However, no detachments are visible yet.

Meanwhile our local resources are few. Why has there not yet been organized in oil-bearing Tataria its own production of binders? The republic not only recovers petroleum, but also refines it. Some reserves of natural bitumen also exist in the depths of the ground. The waste products of the industrial rubber and tire industry, the cracking resin of petrochemical production and fatty residue, which are still not being fully utilized, have given an excellent account of themselves as additives to asphalt.

The lack of roads is a road to nowhere. It should finally be overcome by our joint efforts. The guiding efforts of the party committees and the active work of local soviets are extremely important for such a transition. Komsomol could do much, having assumed patronage over the construction of roads. For every village, every tiniest settlement should have its own Baykal-Amur Railway Line, because people no longer want to reconcile themselves to the lack of roads.

Economists and sociologists assert that with the laying of a highway to a backward populated place or region the productivity of farming and animal husbandry and the labor productivity of rural workers increase here on the average by 15 percent with the simultaneous retention of capital investments. Not without reason in our village, when dreaming about the road, do they like to say:

"There will be a road, it will reach the stars!"

## Statistics Indicate Losses

Moscow IZVESTIYA in Russian 10 Oct 81 p 3

/Article: "The Statistics: What Harm Is Being Done to the National Economy"

/Text/ The annual losses of agriculture due to the lack of roads exceed 5-7 billion rubles.

Due to the lack of well-built roads in rural areas on the average there are 40 idle days a year per vehicle.

Annually during the period of impassable roads up to 5 percent of the cereal crop and up to 10-15 percent of the hayfields are lost under the wheels due to the driving of vehicles over the plantings.

Due to the low technical level of existing roads the annual overconsumption of gasoline amounts to several million tons, while the overconsumption of diesel fuel and lubricants amounts to many hundreds of thousands of tons.

Vehicles waste up to 40 percent of the effective operating time on the poorly planned access roads to enterprises, bases, warehouses, sugar beet centers and other facilities.

The poor condition and inadequate development of the highway network are the direct or indirect cause of approximately 70 percent of all highway transport accidents and emergencies.

There is an interrelationship between the increase of hard surface roads and the growth of the net output of agriculture. Thus, the increase of the indicator of the density of roads from 1 to 3-4 km per 1,000 inhabitants will make it possible to reduce the capital investments in agriculture by 5-15 percent with the achievement of the same level of output of agricultural products.

During the time of impassable roads up to 60 percent of the available tractor fleet of kolkhozes and sovkhoses is used for the towing of trucks and the delivery of freight. On the average for each farm this requires additional outlays in the amount of 10,000-15,000 rubles.

It has been calculated that the premature digging of sugar beets, due to the fear of bad roads in the autumn, leads to the failure to harvest more than 30 million quintals of the crop of sweet tubers, the decrease of their sugar content by 1.3 percent and in the end to losses of hundreds of thousands of tons of sugar.

The studies of sociologists have identified regions with a sharply increased migration of the rural population. They are, in particular, many oblasts of the Nonchernozem Zone and central Chernozem oblasts, the Volga River area, the Urals and Siberia. The kolkhozes and sovkhoses in regions with impassable roads are losing personnel most of all. And vice versa: the size of the rural population is increasing rapidly at the farms to which modern main highways have been laid.

Due to the decrease of the speed of the transportation flows and idle times at the crossings on Moscow area roads alone tens of millions of hours are being lost



annually, which is equivalent to the layover for an entire year (with running motors) of more than 10,000 vehicles. The same situation also exists on many other main transportation routes.

The calculations of the GiprodorNII show that the doubling of the amounts of construction along with the increase of the amounts of renovation, capital and other types of repair of roads will make it possible to reduce the need for trucks for an equal volume of traffic by more than 150,000 trucks a year and to reduce the need to increase the number of those working in the motor transport of the national economy by more than 200,000 people.

#### Accomplishments, Goals in Road Building

Moscow IZVESTIYA in Russian 10 Oct 81 p 3

/Article by Doctor of Technical Sciences A. Vasil'yev, deputy director of the GiprodorNII of the RSFSR Ministry of Roads: "Roads Are a National Construction Project"/

/Text/ Since the first years of Soviet power questions of road construction have been at the center of attention of the party and the state. In one of the notes of V. I. Lenin to Comrade Gorbunov, administrator of affairs of the RSFSR Council of People's Commissars, there is the assignment to get in touch with engineer N. S. Vetchinkin and to ask him to submit to EKONOMICHESKAYA ZHIZN' or IZVESTIYA an article on the machine method of building roads, which was progressive for those times. Vladimir Il'ich also commissioned him "to discuss whether if only a small number of tractors should be supplied for this work and whether it should be performed systematically." V. I. Lenin in this way formulated this problem. From five-year plan to five-year plan the country increased the network of hard surface roads. During the past decade alone their length has increased by 283,000 km and at the beginning of this year came to 713,000 km. During the years of the 10th Five-Year Plan the amounts of road construction in the RSFSR increased 1.4-fold--this is the fastest growth rate in the entire history of the republic. More than 18,000 km of roads were put into operation in the Nonchernozem Zone--this is substantially more than planned.

The road builders of Belorussia and Moldavia exceeded the five-year plans by more than twofold, the road organizations of Latvia, Estonia, Azerbaijan, Lithuania, Uzbekistan, Armenia, Georgia and the other republics exceeded the outlined gains.

But, in spite of these achievements, the situation in road management remains strained. This was emphasized in the Accountability Report of the CPSU Central Committee to the 26th party congress. At the congress it was pointed out, in particular, that good roads should be an integral component of an efficiently operating agro-industrial complex and an important element of the civic improvement of the contemporary village.

In the decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures to Improve the Construction, Repair and Maintenance of Roads in the Country," which was adopted on the initiative of L. I. Brezhnev in April 1980, fundamentally important tasks are advanced: to complete for the most part by 1990 the development of the support network of main highways with improved surfaces; to

ensure reliable motor transport service between the major economic regions and population centers of the country; to develop the network of local roads which link rayon centers, the central farmsteads of kolkhozes and sovkhoses, and first of all in the Nonchernozem Zone of the RSFSR.

The party considers the rapid construction of modern roads to be an important condition of the successful solution of the economic and social problems facing the country during the 1980's.

Of course, the building of modern roads of the highest technical categories requires considerable material and technical resources. But, perhaps, another thing is no less important--for the accomplishment of the great tasks set by the party and the state new thought is also necessary, a new approach to all the affairs of a large road management is necessary.

And such an approach is becoming firmly established today in many republics, krays and oblasts. In the RSFSR valuable experience in the mobilization of forces and resources for the rapid construction of roads has been gained, in particular, in Krasnoyarskiy Kray and Sverdlovskaya Oblast. The Sverdlovsk workers, for example, have been able in recent years to increase by more than twofold the amounts of road construction.

The difficult problems connected with the construction of new roads are being solved resourcefully and efficiently in Saratovskaya, Belgorodskaya, Kostromskaya, Chelyabinskaya, Novgorodskaya and several other oblasts.

But, unfortunately, for the present the situation is this way far from everywhere. With respect to road management there is still a considerable amount of stagnation and routine.

While speaking to road construction workers, RSFSR Minister of Roads A. Nikolayev once cited the following graphic comparison:

"We are to some extent like the poor peasant from the old parable, who lives in a tumbledown hut and cannot summon up the strength to erect a new one, although he knows that he is enduring inconveniences and is incurring extra expenses on heating and repair, which as a result had long ago already exceeded the amount required to build a new house. However, this allegory is still not totally precise: today we have sufficient forces and means to implement the economically correct decision, but, unfortunately, there has still not matured in everyone the realization that we simply can no longer make progress with such a state of the roads as today."

And indeed, the situation existing in the road management of the country is explained by factors of not only an economic, organizational and technical nature, but also of an extremely psychological nature, for many managers and planning organs have gotten used to the lack of roads as some almost fated inevitability.

Meanwhile it would not be an exaggeration to say that the lack of good roads is literally ruinous, since the effectiveness of the material outlays of the state in all the sectors of the national economy is decreasing sharply.

The low technical level of roads is resulting in excessively great expenditures on motor transport. In our country it accounts for only 7 percent of the freight turnover, it takes up 65.1 percent of all transportation costs.

Due to poor roads it is not possible to fully utilize the economic advantages from the increase of the output of trucks of greater horsepower, as well as multiseat buses. All the profits truly "are eaten up" by the insatiable Moloch of impassable roads!

The studies of the GiprodorNII have shown that the annual losses of the national economy due to impassable roads exceed the allocations for the construction of major highways.

It has been known for a long time: it is not the vehicle, but the road that carries. But, of course, only a good road carries well. Unfortunately, in our country for the present very many roads are still far from the present requirements with respect to such most important indicators as, for example, the type of surfaces, the width of the roadway, the axle load and so on.

The length of hard surface roads in many regions is increasing primarily due to gravel, macadam and similar roads, which are little suited for the traffic of modern high speed and heavy vehicles. World practice has demonstrated the need to increase the basic quality of the road surfaces.

Many roads in our country are being built with allowance for a load on a single axle of the vehicle of not more than 6 tons. But the loads of modern vehicles are much higher. This leads to the rapid deterioration and intensive wear of main highways. The low quality of the materials being used, especially asphaltic bitumen, speeds up this process even more.

The state of the roads is one of the main causes of the extensive development of motor transport. The productivity of the fleet of centralized truck transport is increasing on the average by only 4.7 percent a year with an increase of the freight turnover of 9 percent. Consequently, nearly half of the increase of the freight turnover is being accomplished by simply increasing the fleet of trucks. In uncentralized transport, the size of which is now about 80 percent of the entire truck fleet of the country, practically the entire increase of the freight turnover is occurring owing to the increase of the number of vehicles, which entails an increase of the number of drivers. The extensive means of developing motor transport is resulting in the need to increase rapidly the capacities of the automotive industry and requires considerable capital investments.

/The need has arisen for radical changes in the nature of the development of the automotive industry, motor transport and roads. The acceleration of the intensive means of development and the considerable acceleration of the increase of the productivity of the motor transport fleet, which can be achieved only with a leading rate of road construction and the improvement of the road network, are the main goal of such changes/ In boldface/.

The increase of the average speed of vehicles remains the most promising means of accelerating the increase of the productivity of the fleet. This can be achieved in practice without changing the parameters of the vehicles themselves (for example, the power of the motor): modern trucks are capable of achieving a speed of not



less than 90 km/hr, while on the majority of existing roads the average speed is one-third of that.

/At present the annual increase of the length of hard surface roads in our country is about 20,000 km. Estimates show: in the next few years it is necessary to increase the average annual placement of hard surface roads into operation to approximately 50,000 km, including to build annually about 1,000 km of main highways of the highest category. This means that the amounts of road construction must be increased annually by 15-20 percent. There is no denying that this is a difficult, but quite attainable goal. The point is that at present the main element of the production base of road management--paving asphalt plants--is being utilized at less than half of its capacity. The plants have not been given a full workload due to the insufficient amounts of asphaltic bitumen being allocated/ /in boldface/.

In the past 30 years the freight turnover of motor transport in our country has increased 45-fold, while the length of hard surface roads has increased only 4-fold. As a result the road network is overloaded and can be rapidly ruined.

Indeed, even with faster rates of construction the increase of the length of the road network will be about 5 percent a year. Consequently, as in the past the overwhelming portion of shipments will be carried out over old roads. The transportation portion of the cost of shipments, the consumption of fuel, the efficiency of the operation and the productivity of motor transport, the level of the accident rate and other indicators will mainly depend on their state and technical level.

/Under the formed conditions the task of speeding up the rate of increase of the technical level, the quality and the development of existing roads should be considered one of the primary tasks.

/In order to increase appreciably the contribution of the road network to the changeover of motor transport to the intensive path of development, it is necessary to increase annually the amounts of the capital repair and renovation of existing roads by 10-15 percent and to increase them in the future to 80,000-100,000 km a year. Economic research confirms the feasibility of such a rate: the assets being invested in the improvement of existing roads provide the national economy with the greatest return/ /in boldface/.

It has been estimated that the development and improvement of the road network at such a rate will require a substantial increase of the capital investments in the road management of the country--by 3.5-4 billion rubles a year with the mandatory and complete backing of these assets with the appropriate material and technical resources. There are two basic means of solving the problem. The first is the redistribution of capital investments and material and technical resources within the complex of the three interconnected sectors "the automotive industry--motor transport--road management" in favor of road management, since all these sectors are working on a single goal program problem--the meeting of the needs of the national economy and the population for motor transportation. The second is the partial redistribution to road management of the resources being allocated for the development of agricultural production.

/As the calculations convince us, the redistribution of capital investments will make it possible to solve the problem of accelerating the rate of development of

the road network and will simultaneously ensure the fulfillment of the set amounts of motor transportation, having maintained and expedited the growth of agricultural production and the increase of the national income/ in boldface.

Incidentally, the resources being allocated for the development of the road network are characterized by a high return: an increase of the national income of 2-3 rubles per ruble invested in roads. Today there is not one sector of the national economy, the development of which does not depend on the state of affairs in road construction. However, the inverse relationship is also just as obvious: it is possible to speed up greatly the construction and repair of roads and to organize the work in this truly key sector so that the road business would make enormous progress only with the direct assistance and active involvement of very many related sectors of the national economy.

The major problem of eliminating impassable roads, which is of statewide importance, must be solved by joint efforts, while remembering that this important and difficult work must be carried out systematically!

7807

CSO: 1829/34

## MOTOR VEHICLE

### MISUSE OF REFRIGERATOR TRUCKS

Moscow PRAVDA in Russian 6 Aug 81 p 3

#### /Article/

/Text/ The enterprises of the Sel'khozavtotrans Trust are unsatisfactorily fulfilling the tasks assigned to them on the service of kolkhozes and sovkhoses and are poorly increasing the efficiency of the use of the truck fleet. At all the checked motor transport managements the vehicles operate one shift, nearly half of them are idle for various reasons.



"And you get to the consumer on your own two feet!" (Drawing by Yu. Cherepanov)



A large number of vehicles are being used to transport nonagricultural freight. For example, the main motor transport management of the Vladimir Production Association carries out nearly half of all the shipments for industrial enterprises and various organizations. A significant number of the subdivisions of the trust in Yaroslavskaya, Pskovskaya and a number of other oblasts are acting in the same way. During the harvesting of the crop the Kazan' Motor Transport Enterprise transported shoes, metal items and industrial equipment in refrigerator trucks.

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CSO: 1829/32

## MOTOR VEHICLE

### INEFFICIENCY IN GRAIN DELIVERY

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 3 Sep 81 p 1

/Article by KAZAKHSTANSKAYA PRAVDA correspondent Yu. Peshkov (Ural'skaya Oblast):  
"Grain on the Road"/

/Text/ After loading up with grain at the threshing floor of the second department of the Chaganskiy Sovkhoz, I. Sidel'nikov, a driver of the Zapadelevatormel'stroy Trust headed his truck for the Zhelayevskiy Elevator. The tailgate catch opened spontaneously from the jolts in the potholes, the wheat poured onto the ground.

This incident occurred on the Ural'sk-Aktyubinsk route. The state of the highway does not stand up to any criticism. After driving over it once, it is impossible to forget it. There are ruts, potholes, bulges and broken shoulders almost every meter. Here the rate of speed of transport decreases sharply, the danger of breakdowns increases. And all this is on a road of all-union importance.

"Whereas several years ago we took 6 hours to get to Ural'sk, now it takes twice as long," relates M. Suyungarayev, secretary of the party committee of the Lubenskiy Sovkhoz, "and this is in passenger cars. But what befalls truck drivers?"

Indeed, what?

People return from such trips very tired and worn out. Moreover, the equipment often breaks down. Driver I. Panyk left on harvest business from the same Lubenskiy Sovkhoz, and the universal joint flew off of his ZIL from the incredible bumping. It is a good thing that a second driver, T. Sup'yanov, who took his comrade's truck in tow, was following, or else he would certainly have "gotten a sunburn" on the steppe.

An ill-fated road runs across the territory of five rayons of the oblast. But, perhaps, the Dzhambeytinskiy Rayon workers bear the responsibility for it more than others. Road Maintenance Administration No 43, which is called upon to keep track of the state of roads, is located here. Chairman of the Rayon Soviet Executive Committee G. Graf says: "There is an administration, but there is no road."

That is true of course, but the administration itself is not capable of coping with the problems. In addition to the Ural'sk-Aktyubinsk section the Dzhambeyta-Dzhambeytinskiy Sovkhoz, the Dzhambeyta-Karatobe and Dzhambeyta-Dzhambul sections have been added to it. The amount of work has increased twofold, but the material

and technical base has remained at the former level. The administration now is in great need of at least a road grader, other road equipment would not hurt. Talks have been under way for many years on providing the maintenance workers with a mobile asphalt plant, but the matter so far has not been resolved. As in the past asphalt is brought in from Ural'sk, over a distance of 300 km. For these reasons the road maintenance administration cannot engage in the capital repair of roads and performs only minor, "hole" repair. The highway linking Ural'sk and Aktyubinsk, which is of great importance for the development of the economic ties of neighboring oblasts, in fact has been left to the mercy of fate. Road problems are becoming especially urgent now, during the transportation of grain. The road workers were totally unprepared for it. All the appeals of the rayon soviet executive committee, the letters and calls to various instances with the request to influence the comrades from Road Administration No 43 remained unheard. Ye. Gubashev, the chief of such an authoritative organization, also has remained as silent as the grave. So the drivers wind a "snake" over the broken highway, some way or other driving around the pits and potholes and losing precious grain.

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## MOTOR VEHICLE

### TIRE SHORTAGE HAMPERS HARVEST DELIVERY

Moscow SOVETSKAYA ROSSIYA in Russian 3 Sep 81 p 1

/Article by V. Avdevich: "Laid Up"/

/Text/ By the end of the second week V. Ushkan'--the driver of a KamAZ truck which was registered with the Leningradskiy Rayon Sel'khoztekhnika Association of Krasnodarskiy Kray--definitely knew that he would not take the planned 1,000 tons of grain from the fields of the Kolkhoz imeni Lenin. No wonder the powerful truck in good technical order is unable to budge. Because all its wheels are without shoes. There are no tires! None of them have been delivered to the local base during the busy days of the harvest. Thus the harvest of winter grains in the rayon ended without the participation of V. Ushkan'. The truck of M. Polozkov--the driver of a KamAZ from the Khaybullinskiy Rayon Sel'khoztekhnika Association of the Bashkirskaya ASSR--is also idle for the same reason. Similar signals are also arriving from other regions of the RSFSR.

Due to the lack of "shoes" by the beginning of September 7,000 trucks were excluded from transportation operations in Krasnodarskiy Kray, more than 2,000 were excluded in the Bashkirskaya ASSR. For the RSFSR as a whole about 17,000 trucks are idle.

Why did the problem of tires suddenly arise?

"First," says N. Kozlov, chief of the Main Administration for Supply of the RSFSR State Committee for the Supply of Production Equipment for Agriculture, "the republican State Planning Commission cut our annual request for capital by 16 percent. Second, the USSR Ministry of the Petroleum Refining and Petrochemical Industry upset the plan of deliveries of its products: since the beginning of the year we have failed to receive 6,000 tires."

As we see, quite formidable explanations have been found at the department which is responsible for supplying agricultural workers with material resources. But they will hardly satisfy the drivers who are doomed to inactivity during the busy times. Moreover, the task of the executives of the State Committee for the Supply of Production Equipment for Agriculture is not to find explanations for the difficulties. The main thing in their activity is the prompt solution of problems which have arisen. What is it necessary to do so that right today, now the transportation workers would receive the number of tires they need?

"Only USSR Gosnab can help the matter," N. Kozlov declines all responsibility.

"Everything possible has been done on our part," stated M. Mamsurova, deputy chief of Soyuzglavrezinsnabsbyt. "In spite of the considerable lag in the production of tires, the plan of their delivery to RSFSR agriculture was exceeded. Moreover, during June-July 158,000 additional tires were specially sent to the RSFSR State Committee for the Supply of Production Equipment for Agriculture."

As we see, the "objective reasons," about which N. Kozlov spoke, were obviously made up. But the elementary inefficiency and lack of control, which were displayed by supply services of the RSFSR State Committee for the Supply of Production Equipment for Agriculture, were discovered. They were not able to distribute the additionally received tires among the oblasts and krays so that no motor column would experience a need for them. In essence--if we assess what happened from the standpoint of the state--it is necessary to consider the executives of the RSFSR State Committee for the Supply of Production Equipment for Agriculture as some of the parties to blame for the idle time of the motor transport which was allocated to transport grain.

On the eve of the harvesting of the crop the national economy allocated to the workers of kolkhozes and sovkhoses a large number of trucks from various departments and organizations. More than 17,000 of them, as we know, are idle. Will they make it to the field and when? That is the question to which we would like to receive a clear and quick answer.

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CSO: 1829/32

## RAILROAD

### PROBLEMS, PROGRESS OF RAILROAD INDUSTRY EXPLAINED

Moscow GUDOK in Russian 14 Jul 81 pp 1-2

[Article: "For All-Union Railroad Worker's Day--By the Five-Year Plan Route"]

[Excerpt] It is working beautifully! This is perhaps the highest rating that can be given for operational expertise.

The heart is gladdened when you see how the railroad car engineer manipulates the controller by means of the lever! His hand seems to apply no effort--it floats in the air. You can also recognize the master by the rhythm of the clicks of the controller and how it switches on the last shunt. It places a period at the end of a rapidly written sentence.

And how beautiful is the operational chart of the good dispatcher! And he draws it as if playing an instrument. But each line is like a chord--not one wrong note. Sometimes you ask: why this pure sketch? Of course it would be better to have a trip journal which automatically fixes the sketch on paper. But not having that, the individual who respects his labor tries to see to it that the document which reflects the results of his work is something that it is pleasant to take in one's hand. And incidentally, it is also used to arrive at an accurate analysis of the chart more readily.

Observe how the experienced car inspector makes the hammer obey his will. And you cannot help but be struck by the ease, assurance and sharpness of its movements. When it strikes the wheel it is as if it has placed its stamp there to say that it has checked and everything is in order.

Also working beautifully are the railroad workers of the other occupations. And this beauty embodies not only a splendid expertise acquired by years of persistent labor but also a respect and love for the endeavor to which he has devoted his life and the pride in his vocation. The most important thing is that this beauty is combined with the maximum labor productivity and effectiveness. It is the beautiful working handwriting of each of the 20 railroad workers who recently earned the rank of Hero of Socialist Labor, the more than 16,000 workers of the steel lines who were awarded orders and medals, and the thousands and thousands of our production innovators and outstanding workers. These people are setting the fashion in the competition, obtaining the best possible results, and setting a worthy example for all to emulate.



We think that in the period of preparation for and observance of our occupational holiday--All-Union Railroad Worker's Day--our propagandists and agitators should more frequently tell about our workers' guard and its remarkable achievements.

Much, very much can be told about the great concern which the Communist Party and the Soviet government is displaying in their endeavour to escalate the prestige of the difficult but very crucial transport occupations. And much can be told about what is being done to bolster the personnel and to improve the conditions of the life and labor of the railroad workers. It is not hard to choose vivid, graphic and convincing examples from the practical work of their collective.

The holiday is our definitive occupational observance. And it must above all serve to inculcate professional pride and an awareness of the great trust and enormous responsibility to the motherland on the part of those who labor in one of the key sectors of the national economy and who conduct a difficult but very honorable duty watch in the chief transport conveyer of the country.

For the holiday we have undertaken the task of summing up the results of what have been done and the drawing up of plans for the future--this is an excellent tradition. Nearly a year has gone by since the August Sunday when we last observed Railroad Worker's day. This year was replete with peaceful creative labor and filled with noteworthy events in the life of our party and of all the Soviet people. And the chief event was, of course, the 26th CPSU Congress. It has convincingly confirmed the fact that our party is confidently continuing the work of the Great October, is consistently implementing the ideas of V. I. Lenin and is unflinchingly guided by the most important program requirements--everything in the individual's behalf and everything for his welfare.

The 70's have been marked by new major achievements in the development of the country's national economy. The national wealth of the USSR is now estimated at more than 2.7 trillion rubles. In 10 years gross national product increased by 67 percent. The output of industry showed a 78 percent increase and agriculture 23 percent; goods turnover of all the types of transport increased by 61 percent. Our productive capital more than doubled. Retail goods turnover increased by 70 percent.

A broad program of enhanced public welfare was implemented. The state allotted 32 million rubles for increasing wages, pensions and grants. Production of consumer goods was nearly doubled. Housing construction proceeded on an unprecedented scale. Approximately 80 percent of the Soviet people now enjoy individual apartments.

"The results of the development of the national economy," declared Comrade L. I. Brezhnev in his report at the 26th CPSU Congress, "provides convincing confirmation of the correctness of the party's economic strategy. The country is making substantial advances in all the aspects of the establishment of a material and technical base for communism. The productive forces of Soviet society have attained a qualitatively new level. The scientific-technical revolution is developing in depth and breadth and it is changing the face of many of the production enterprises and of entire industries. Soviet science is occupying leading positions in the most important branches of knowledge. The country's economic might is providing a dependable guarantee of continued progress on the path of communist construction."

The Congress took note of the new magnificent program of creative development and approved the "Basic directions for the economic and social development of the USSR in the 1981-1985 period and in the period up to 1990." It formulated the principal task of the 11th Five-Year Plan in precise and clear terms: To provide for the further enhancement of the welfare of the Soviet people on the basis of a steady and consistent development of the national economy, acceleration of scientific-technical progress, and the placement of the economic system on the intensive path of development; also, more rational exploitation of the country's economic potential, thoroughgoing economy in the expenditure of all the types of resources, and improvement of the quality of the work.

The party requires that more decisive measures be taken to overcome inertia, that the qualitative aspect of the work be given priority, that production efficiency be increased even more energetically and persistently, and that the policy of economy be strictly pursued. These apt words spoken by Comrade L. I. Brezhnev from the rostrum of the congress--"The economic system must be economical"--have become truly winged. Answering this call, the workers of all the national economy sectors are trying to operate more zealously and more economically and to better exploit the enormous resources which are now available to our country.

Realizing our majestic plans in practical work is only possible in the context of peace. In the complex international situation wherein the war-oriented militarist circles headed by American imperialism are conducting an unprecedented arms race and the NATO headquarters is hatching plans for the use of rocket and nuclear weapons--while this is transpiring our party and our socialist state are firmly announcing their steadfast resoluteness and continuing to defend the cause of peace. The 26th CPSU Congress advanced a concrete program for the consolidation of peace. The session of the Supreme Soviet USSR recently adopted an appeal to the parliaments and peoples of the world. This stirring call to resolve all the disputed questions at the negotiating table, to curb the arms race, and to preserve and take dependable measures for peace on earth--this appeal embodies the primary requirement for the survival of mankind.

At the 26th Party Congress, its decisions and the CPSU Central Committee and USSR Council of Ministers decrees issued in accordance with these decisions mapped out a concrete program of continued development and improvement of the transport work. We will today talk about this program, about the way in which the railroad workers are implementing it, and how they are finding and putting into operation intra-organizational reserves for successful fulfillment of the assignments and the lofty socialist obligations assumed for the first year of the 11th Five-Year Plan.

#### The Chief Directions of Technical Progress

To provide for the full and punctual satisfaction of the national economy and population needs for transport and to step up the effectiveness and quality of the work--this constitutes the basic tasks assigned to the transport workers by the 26th CPSU Congress. The accomplishment of this task is the objective of the comprehensive program now being worked out on the initiative of Comrade L. I. Brezhnev, a long-term program for the development of transport along with a broad plan of work, which is to be implemented in the current 11th Five-Year Plan

The trend toward more rapid development of motor vehicle, air and pipeline transport will also be sustained in the future. However, the railroads will henceforth continue to be the chief and most important component of the country's transport system. In five years their freight turnover increased by 14-15 percent and in 1985 it will reach the enormous quantity of 3 trillion, 900 billion ton-kilometers, an amount without precedent in world experience. Passenger turnover will increase by 9 percent and will comprise 370 billion passenger-kilometers. To handle such enormous volumes of shipments a concrete program of action was set forth in the CPSU Central Committee and USSR Council of Ministers decree on "Measures for improvement of the work of railroad transport and for its comprehensive development."

The railroad network itself will obtain further development. It is planned within five years to lay 3,580 kilometers of new lines and to build 5,070 kilometers of secondary and tertiary tracks and two-track additions. Emphasis is being placed on unloading lines such as the Pogromnoye-Pugachevsk-Rybnoye-Uznovo, the Kiev-Tripol'ye, and the Anzherskaya-Barzas. Also slated for construction are bypasses of the large junctions--the Rostovskiy, the Ufimskiy, and the Saratovskiy. By the end of the five-year plan period we should open through train traffic on the entire length of the Baykal-Amur Mainline. All this will facilitate the operation of the increasing flows of railroad car transport.

Comrade L. I. Brezhnev called the station tracks an economical and rapid way of increasing the carrying capacity of the railroads and he called for the concentration of manpower and means for this purpose. In the new five-year plan approximately 900 million rubles of capital investments are allocated for these purposes. We are faced with the task of laying 2,400-2,800 kilometers of station tracks, equipping 12,000 switches with electric centralization, mechanizing 40 sorting yards, and buildings some 40 pneumatic systems for conveying freight documents.

The Orekhovo-Zuyevo is a sort of standard of a modern sorting station. The scientists and specialists there have been applying a large complex of progressive technical and technological principles and the operational workers have successfully put new capacities into operation, have devoted considerable manpower so as to obtain a substantial return from the considerable capital expenditures. The work done at Orekhovo-Zuyevo was recently accorded the approval of the board of the MPS [Ministry of Railways]. Innovative principles were applied in remodeling such important stations as Yasinovataya, Leningrad-Sorting-Moskovskiy, Inskoy and others. It is necessary to make maximum use of the rich experience acquired when the stations and junctions are being constructed and remodeled in the course of the current five-year plan.

It is the stations which in recent years have been the stumbling block in the path of the trains. Disruptions arise in the movement of these trains most often because of the considerable delays at the entrance signal lights. On many lines the stations limit the length and weight of the trains and hence the carrying capacity. In the last five-year plan the tracks were lengthened at 900 stations. The current five-year plan calls for the fulfillment of this work at a thousand stations more. As a result, the amount of track for the handling of lengthened trains is being extended by 22,000 kilometers. It is essential that this important labor-intensive job is planned efficiently and that it is organized in proportion to the introduction of longer tracks at the stations, exploiting in this the Moscow workers'



experience as approved by the CPSU Central Committee and the regulation handling of trains of greater weight and length.

Thus, in the current five-year plan paramount attention must be focused on the development and restructuring of the work of the stations. This is a crucial matter. The way it is resolved will in many respects determine the successful and rhythmic operation of the entire gigantic transport conveyer. For this job we have opened a broad field for the application of the energy and creative powers of the workers of all of our basic services.

One of the chief directions of technical progress has been and continues to be the electrification of the railroads. We can be proud of the work done in this field. For many years now our country has firmly occupied a leading world position in the extent of electrified lines and in the volume of freight and passenger transportation carried out on them. By the end of the 11th Five-Year Plan the total length of the electrified mainlines will be increased by an additional 6,400 kilometers and will exceed 50,000 kilometers. These lines will handle up to 60 percent of the total volume of transport work.

Nearing completion is the change to the most progressive type of traction on the entire enormous supermainline from Brest to Khabarovsk. We are electrifying a third line--the line connecting Moscow and the Ural region (the so-called Kazan' route) and many important sectors in Kazakhstan, Siberia, the Ukraine and many other regions of the country. And what an enormous impact this electrification will make! The traffic and carrying capacity of the lines will be significantly increased and the speed of movement of the trains will be stepped up. In the five years we will be able to effect a saving of over 7 million tons of diesel fuel. The savings on operational costs will reach 670 million rubles. Approximately 8,000-8,500 workers of the operational personnel will be freed for use in other projects.

For the operation of the increasing volume of transport and the stepping up of the effectiveness and quality of the work of the country's entire transport system, it is hard to overestimate the importance of the policy of containerization and packaging. In 1980 the railroads shipped 40 million tons of freight in containers. By the end of the current five-year plan this volume will be nearly doubled and will comprise 72-75 million tons. More than 30 million tons of valuable freight are to be conveyed in large-tonnage containers. Packaged shipment will be developed at even higher rates. In 1985 the volumes of these will add up to 325-345 million tons. What impact will this have? First, mechanization will free a large number of people engaged in heavy physical labor in loading and unloading operations. The effect here is both economic and social. Second, we will have accelerated fulfillment of these operations and hence reduced layover time for the rolling stock. Third, mechanization is resulting in greater safety of the freight. Fourth, there is a saving in the large quantities of the assets and material resources expended in the customary shipments as compared to the use of containers and packages. And, of course, it becomes possible to discard the delivery of goods on the "door-to-door" principle.

Keep in mind these figures! According to the estimates of the specialists, transport of one million tons of packaged piece-goods freight instead of delivery in

covered railroad cars enables us to save 200,000 cubic meters of lumber, 25,000 tons of metal and 20 million square meters of packing cloth. If you add to the materials saved the gain resulting from the reduction of labor costs and from the more rapid delivery of freight, then the total saving exceeds 20 million rubles. This is for a million tons. And the increase of container shipments amounts to 32-35 million tons.

The rolling stock is the most active part of our productive capital. And renewal and improvement of it is the most important direction of technical progress. The current five-year plan provides for an increase in the delivery of locomotives and cars and spare units and parts for them. It also calls for a significant development of the repair base. And it is a matter not only of quantity but also of quality. The railroads are in need of more powerful, high-speed locomotives and most important, more dependable locomotives. Only if we have such traction means can we sharply increase the weight and speed of the trains and insure uninterrupted travel of these trains. The railroad workers hope that the workers of transport machine-building and the electrotechnical industry will exert maximum effort for the expeditious manufacture of experimental models of electric and diesel locomotives which meet modern requirements. Also that in the shortest possible time they organize mass production of these locomotives.

The railroad car fleet must be intensively reinforced with rolling stock of large freight capacity—eight-axle flatcars and tank cars. At present the proportion of such cars barely exceeds one percent. And yet with this length of station tracks, the eight-axle flatcars can be used to form trains of 37 percent more weight than those consisting of four-axle cars. This great potential for increasing the carrying capacity must be made to serve the five-year plan. We are providing for the production of specialized railroad cars. This is the correct way to achieve fuller utilization of the freight capacity, better maintenance of the safety of the freight, reduction of the expenditures for cleaning and washing and--most important--full mechanization of the labor-intensive loading and unloading operations.

The "Basic Directions of the Development of the National Economy" includes the following: "To accelerate the conversion of the railroad car fleet to roller bearings." In particular, the new rolling stock will be delivered only with such skid units. In addition, it is planned during the five-year period to switch 200-250,000 cars of the operational fleet from skid to roller bearings. We will cite some figures to give you a graphic idea of the enormous effect which can be obtained as a result of switching all of the rolling stock to roller bearings.

Every year we will save about 3 billion kilowatt-hours of electric power, 1.5 million tons of diesel fuel, more than 20,000 tons of nonferrous metals and more than 400,000 tons of axle lubricant. And how many workers now engaged in unattractive manual labor have been freed! Many, many thousands. In monetary terms the total yearly effect amounts to 500 million rubles. This is one of the large reserves which requires that we be more decisive in executing the recently issued CPSU Central Committee and USSR Council of Ministers decree on "Intensifying the work for the conservation and rational use of raw material, fuel and energy, and other material resources."



We can be sure of maintaining the enormous freight and passenger traffic, increasing the speed of movement of the trains, and stepping up the freight capacity of the rolling stock only if we have at our disposal a high-powered and dependable track management. In the new five-year plan transport is to receive 25 percent more rails than in the preceding one and by the end of 1985 the extent of the unjointed track on reinforced concrete crossties will be brought to 60,000 kilometers. Provision has been made for the remodeling of many important man-made structures. To replace the bridge spans which have served their time we are allotting more than twice as much metal as in the preceding years.

An important problem in this sector of our economy is the problem of full mechanization of the track and repair work. If this problem is not resolved it will in the future be very difficult to maintain the track in the proper condition. There will not be any volunteers for manual fulfillment of the heavy work. During the five-year period the machine-building workers are supposed to deliver to transport more than 120 packing cranes, about 300 smoothing, lining and leveling machines, a large quantity of snow-clearing machines, and other equipment. It is important to see to it that all this equipment is of high quality and that it is maintained and used properly with maximum effect.

Technical progress enables us to step up the effectiveness and quality of the work of the other sectors of the multifaceted railroad operation. The greatest attention is being focused on the task of full mechanization of the loading and unloading operations. During the five-year period the freight-handling economy will receive about 10,000 highly productive machines and mechanisms. The length of the lines equipped with automatic blocking and dispatcher centralization will be expanded by more than 15,000 additional kilometers. Automation, telemechanics, modern microprocessors and mini-EVM [electronic computers] will be extensively employed in many of our enterprises. They will enable us to automate the control of many technological processes and will help us to step up the efficiency of the passenger service. A major advance is also to be made on the path of stage-by-stage introduction of automatic systems of railroad transport control (ASUZhT). Efficient use of the electronic equipment with which our computation centers, subdivisions and enterprises are equipped and the extensive use of modern economic and mathematical methods in the practical work--these constitute an important lever for stepping up the effectiveness of the control of the transport conveyer and significantly improving the quality of all our work.

The state is investing enormous amounts of assets in the development and remodeling of the steel lines and outfitting them with modern equipment. The overall capital investments in the current five-year plan are nearly one-third greater than those in the preceding plan and the appropriations for construction and installation work 42 percent greater. And these resources must be used with maximum effect to insure that all the planned installations are put into operation strictly within the established time limits and, in addition, with excellent and good quality so that the new capacities are developed more rapidly and will yield a maximum return. And this requires that we strengthen the cooperation with the transport construction workers, that we try to set up the necessary work front for them, and that we furnish effective daily aid.

## Our Most Important Reserves

We have gone through half of the first year of the 11th Five-Year Plan. And some of the results can be summed up. After extensively developing socialist competition in honor of the 26th CPSU Congress, the railroad workers took on a high rate of work at the start of the five-year plan. The assignments for two months were considerably overfulfilled. However, by no means every area was able to maintain this rate. And yet the six-month plan for the network as a whole was overfulfilled by nearly 5 million tons and the assigned freight turnover was exceeded by 10.8 billion ton-kilometers. As against the first six months of last year improvement was achieved for the most important qualitative indicators.

However, the railroads are still operating under great pressure. They are not fully satisfying the national economy requirements for shipments involving a number of crucial products, particularly coal, lumber and mineral fertilizers. Whereas the increase of shipments as against the comparable period last year was 22 million tons, in the last six months of the year, this amount must be increased nearly five-fold and more than 100 million tons of freight must be shipped out; and crucial freight in the overwhelming majority of cases.

This increase of shipments can be successfully handled only by vigorously mobilizing the reserves and persistently obtaining efficient, rhythmic and smooth operation in all the links of the transport conveyer. It is on this that the efforts of the competing collective must now be concentrated. This task must be the objective of the creative search of our specialists and production innovators. We know that our principal reserves are found in more productive and effective utilization of the rolling stock. These reserves should also be put into operation on a first-priority basis.

Most of the cars begin and end their trip on the approach tracks of the industrial enterprises. More than 80 percent of the labor-intensive loading and unloading operations are carried out on these tracks. The layovers for these operations consume about one-third of the car turnover time. And on the scale of the network every hour gained yields a considerable saving of loading resources. In the first six months the average layover for a loading operation was reduced by 42 hours. Of course, this is far from the maximum possible. In practice we have barely begun to put into operation the latent reserves applicable in this matter. But we have set an example of a wholly rational approach to the task and a very instructive one.

We are talking about something like the L'vov system of coordinated development, efficient cooperation between the mainline and the industrial transport, effective planning of joint operations, and the use of effective moral and economic incentives in the struggle for more effective use of the cars. The work of the L'vov people was recently approved by the CPSU Central Committee and recommended for general emulation. And it is important to see to it that every area also more rapidly makes use in its work of the well-known experience of the Chelyabinsk workers, which has at this time received high praise from the CPSU Central Committee.

We must develop and strengthen in every possible way the cooperation with the workers of the other types of transport—the seamen and the river and motor vehicle

transport workers. Disruptions still frequently occur in the transport centers and in the junctions of the transport conveyer. Uninterrupted operation according to the plans and schedules, the application of an integrated technology, the organization of unified shifts, cooperative use of the switching facilities and the various devices, machines and mechanisms, well organized competition--all these are important components of genuine cooperation. And we must see to it that the workers in all the centers operate within the framework of close cooperation, following the example of the Leningrad and Odessa transport workers.

In addition to the reduction of layover times for the cars on the approach tracks, in the ports, in the freight yards of our stations, and in the Promzheldortrans [industrial railroad transport] associations, there is another very important reserve. In practice it is decisive in determining the outcome of the consolidated loading. As compared to the comparable period last year, the past six months showed a 470 kilogram increase in the static load. The assignment for this important qualitative indicator was overfulfilled by one-fourth of a ton. This enabled us, without employing any additional cars, to ship approximately 9 million tons of freight. A substantial reserve! And if every area follows the example of the workers of the Odessa Railroad and their neighbors and develops competition for the shipment of an additional 2,000 kilograms in each car the effect can undoubtedly be multiplied many times over.

The freeing of cars for additional shipments is only part of the effect of compact loading. The heavier each car is, the greater the weight for the forming of trains on the same length of station tracks. Last year the average gross weight of the trains exceeded 2,800 tons. In the period of the five-year plan it increased by 87 tons and in the first six months of the current year by 28 tons. The Moscow railroad workers were the initiators of systematic operation of large-load routes--in six months they raised this important indicator more than 50 tons. On a number of important lines where the traffic capacity was built up by 90 and more percent, the increase in weight of the trains provided practically the only possibility of handling the increasing flows of freight.

This is why such great importance is attached to increasing the weight and length of the trains. It is why anyone who employs all of the potentialities in this field deserves all possible support. And making their personal contribution to this undertaking of great and truly state importance can and must be the task of the railroad workers of nearly all our services--the train engineers and dispatchers, the receiving and delivery workers, the compilers of trains, the car inspectors, and the goods accountants. The chiefs and the specialists also play a great role in this work.

Cooperation and close, businesslike contact with the freight shippers and recipients and with the workers of the supply organs enable us to significantly expand the routing of the shipments. And this is also one of our sizable reserves. The current five-year plan assigned the task of stepping up the routing from 46.8 to approximately 50 percent. This is, of course, no simple matter but we have rich experience acquired in Belorussia and a number of other places. Good results stemmed from the comprehensive competition of the coal miners of Ekibastuz and the power engineers and workers of the Iselinna and a number of other mainlines, who have organized delivery of fuel to the electric power stations by



circumferential routes. There are substantial potentialities for expanding the routing in the shipment of lumber, grain and many other goods. And these potentialities must be exploited without fail.

In the current year the collective of the Moscow-Ryazan' branch has shown valuable initiative. It decided to obtain the entire increase of loading from the economies resulting from the acceleration of the railroad car turnover. The specialists estimated that reaching this goal would require for the network as a whole the freeing of an average of 8,000 cars a day. Competition is being developed and is recruiting manpower for the purpose of undertaking this difficult task. In the first six months of the year car turnover was accelerated by 2.4 hours as against the comparable period last year. Along with the initiators, the advance guard of the competition includes the collectives of the Abakan, Belovo, Novosibirsk, Rostovskiy, Kuybyshev and several other branches. They are setting an example of accelerated movement of the flow of railroad cars and skillful work with the local freight.

The 11th Five-Year Plan has set the task of accelerating railroad car turnover by approximately 20 hours. It has been estimated what this will yield. In the course of a year, with the same fleet of cars, we will be able to ship more than 500 million additional tons of freight. An enormous reserve!

The rhythm and safety of the traffic, and consequently, to a great extent also the fulfillment of the shipment plans, depend on the reliability of the technical facilities and how we maintain and repair the locomotives, cars and tracks, the STsB [signalization, centralization and blocking] devices, the communications and power supply equipment, and the various machines and mechanisms.

In the first six months the productivity of the locomotives increased by 17,000 ton-kilometers gross weight. However, there is still a great deal of damaging and stops of locomotives, particularly diesel locomotives, for unplanned repair. The success of the trip rests with the repair shop, according to the workers of our advanced locomotive depots at Sol'vychevodsk, Moscow-Sorting-Ryazansk, Ryenoye, Zhmerinka, Krasnyy Liman and our best plants. They are trying to do everything possible to guarantee a high level of reliability of the machines and minimum lay-overs for conditioning. This work is well known. It is a matter of obtaining the go-ahead for it in all areas as soon as possible.

The railroad car workers also have someone to compete with, someone to emulate. A good reputation has been earned by the collectives of the Krasnoarmeysk, Brest, Likhaya, Ussuriysk and Predportovaya depots and many points for technical servicing and preparation of the cars for loading. These are places which are providing for superior quality of repair and inspection and effectively guaranteeing the movement of rolling stock without uncoupling of cars through the lengthened guaranteed sectors.

The railway ministry recently issued special orders which call for a large complex of measures aimed at a fundamental improvement of the organization and technology of repair as well as of the current maintenance of the locomotives and cars. The task requires that every depot, every PTO [technical service point], and all our repair plants, by fulfilling the requirements of these orders, should drastically

improve the quality of the conditioning of the rolling stock so that all the repair operations are carried out in good conscience, so to speak.

On many of the lines the run of the trains is inhibited by the large number of warnings to reduce speed because of the condition of the track. In the current five-year plan the volume of capital repair of the rails will be increased by more than 28 percent. And special importance attaches to efficient organization of the work at the "window" and the superior quality of this work, which will insure the movement of trains at high speed immediately after the opening of the run. The slogans of the outstanding workers—"The 'windows' according to the plan—the trains according to the schedule of presentation" and "At each 'window'—the optimum processing—must become the rule for all."

Every sector of our multifaceted economy has its right-flank collectives which constitute models of dedicated labor. These models must retain the alinement and more skillfully emulate the progressive procedures and methods of work developed by these collectives.

To labor effectively means above all to devote every working minute to the undertaking, to use the equipment in a highly productive and efficient manner, and to pursue a policy of thriftiness in the expenditure of raw material, fuel and electric power. This was emphasized once more in the recent decree of the CPSU Central Committee and the USSR Council of Ministers. Railroad transport is a large consumer of material and energy resources and we have been entrusted with enormous assets. And our duty and our obligation is to provide for the complete safeguarding of the freight being shipped and to strictly observe a policy of economy. And for the grand rallies dedicated to our vocational holiday it would be appropriate to cite the names of the train engineers who have perfected their expertise in operating the large-freight trains and are achieving the maximum possible economy of electric power and fuel, the dispatchers who are organizing unimpeded traffic on these routes, the fitters who are striving to make maximum use of antiquated parts, and the workers of many other occupations, who always perform in the manner of zealous proprietors.

At work in our railroad transport is a large army of inventors and efficiency experts. They have brought 711 million rubles into the savings fund of the 10th Five-Year Plan—161 million rubles more than the amount stipulated in their socialist obligations. Now it is important to direct the efforts of the adherents of technical progress to the task of finding and putting into operation the deep-seated reserves for stepping up the rate and improving the effectiveness and quality of the work.

Last year our steel mainlines transported 3.6 million customers. Put into operation in the years of the last five-year plan were 300 new stations, more than 2,000 platforms, and about 600 pavilions and sheds. The railroads acquired 14,800 passenger cars, and a considerable quantity of various automatic devices. A still larger volume of work and deliveries is planned for the current five-year period. Enjoying a reputation for their superior expertise in services are our best stations of Chelyabinsk, Brest, Tallinn, Ul'yanovsk and the company trains of the Baltic and several other roads.



However, there are still being received many, very many valid complaints about the tardiness of trains, the inadequacies in the preparation of these trains for the trip, and the rudeness on the part of some of the workers whose duty is to provide the necessary service for the passengers. Must we really put up with the fact that in a number of branches the passenger schedule is only 50 percent fulfilled? It is a matter of professional honor for the railroad workers to decisively improve the situation so that on our holiday and on weekdays the passengers leaving the train will utter a heartfelt "Thank you."

Many of the workers of the passenger service can be trained on the metros. The metros have now become the largest and the most convenient type of mass transport in eight of the country's largest cities. The total length of the underground lines has exceeded 340 kilometers. In the years of the 10th Five-Year Plan alone the increase in transportation on these lines came to almost 30 percent. In the current five-year plan the routes of the blue express trains will be extended by 112 kilometers. Metros have appeared in Minsk, Gor'kiy and Novosibirsk. It is very important that in expanding the geography we do not erode the good reputation of the Soviet metros, which are rightly considered the best in the world.

Railroad transport is rightly called one of the most important, key and basic sectors of our economic system. Efficient and dependable operation of this transport in many respects determines the successful functioning and development of the entire national economy. It also plays a major role in the provision of transport service for the population. This is why such importance, honor and urgency attach to the labor of the army of railroad workers who are carrying out the difficult watch on the country's steel mainlines.

And in honor of their occupational holiday thousands and thousands of workers, maintaining a good tradition, have taken on sizable commitments and have developed widespread socialist competition for the successful fulfillment of these commitments. The transport work guard is fully determined to make its substantial contribution to the national struggle for implementation of the magnificent program of creative endeavor mapped out by the 26th CPSU Congress. We are celebrating our holiday—All-Union Railroad Worker's Day—with shock labor and highly productive labor for the glory of our great motherland.

7962

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## RAILROAD

### USE OF POLYMERS FOR PANELS ON GRAIN CARS

Moscow GUDOK in Russian 22 Sep 81 p 2

/Article by L. Bulankov, GUDOK correspondent: "Decisions of 26th Party Congress Put Into Practice: Release the Polymers"

/Text/ "Increase the responsibility of the ministries and departments for the level of research in the scientific institutions and make rapid use of the results of completed scientific developments and inventions in production."  
(From the Basic Directions for the Economic and Social Development of the USSR)

The condition of the roof of a freight car frequently determines its fitness for further use. If the roof has rusted through or worn thin to such an extent that it cannot be taken care of within the depot, then it is sent in for capital repairs. Here the roof is covered with new one and a half millimeter thick sheets of low-alloy steel weighing more than a ton and the car is returned to the railroad line. The freight car is then supposedly good for another 10 years until the next capital repair job is needed. However, the actual time period is considerably less than this. Is it impossible to extend this period of time?

As early as the first half of the 1960's on the initiative of workers in the polymers section of VNIIZhT /All-Union Scientific Research Institute of Railroad Transport/ several railroad cars were equipped with fiber glass roofs. The institute workers did this on their own. Six of these cars were then put into operation on a closed system and subjected to all sorts of experiments. Without any repair work at all these polymer roofs lasted 16 to 18 years!

The question arose about manufacturing a test batch of railroad cars with fiber glass roofs. In September 1978 the USSR Ministry of the Railways sent the USSR Ministry of Heavy and Transport Machine Building an order for the construction of a test batch of 1,000 such railroad cars. And the ministry was turned down.

This marked the end of the attempt of the VNIIZhT workers to adopt another new idea as quickly as possible. The research indicated that the durability of a railcar floor board could be increased if this fiber glass was applied to its exterior side. What is more the thickness of the board could be cut in half. In turn it was decided to

re-equip several hundred railroad cars during repair work at the Khash plant using this method. The plant turned out about ten of the cars and that was the end of it and nothing more was heard.

Of course, one can accuse the workers of the USSR Ministry of Heavy and Transport Machine Building of not wanting to occupy themselves with this bothersome matter. And this accusation would be completely justified. After all the use of railroad cars having the fiber glass roofs and a more durable flooring promises to reap a significant savings. But it is the transportation workers who are most motivated by these savings. It is they who had to insist upon and set the example in organizing the equipping of railroad cars with the new roofs and floors in their own repair plants. During plant repair work the roof and floor board are almost completely replaced.

While the VNIIZhT was able to equip cars with fiber glass roofs using their own resources, it is much easier to do this at the repair plants. It is thought that the persistence of the specialists and managers of the Railroad Cars Main Administration would make it possible to put these new processes into operation. But, apparently, they decided not to spoil relations with either the Main Administration for Repairs to Rolling Stock and the Production of Spare Parts or the USSR Ministry of Heavy and Transport Machine Building. And, as they say, water does not flow under a rock.

Polymers are used extensively in railroad transport. And this results in quite a few advantages. Not less than 45 million rubles are saved each year. And a lot of ferrous, non-ferrous metals and wood products are conserved! More than 600,000 tons of pigiron alone is saved in the manufacture of brake composition shoes. It has been estimated that if polymers were used more actively in transportation equipment and if the more important recommendations of the VNIIZhT were realized more quickly, the yearly savings could be doubled - reaching 90 million rubles.

For example, as new sections of track made of reinforced concrete ties are put into operation, there is a rising requirement for polymer subtie plates. These plates serve as both shock absorbers and insulators of the track circuit. These plates are manufactured by the USSR Ministry of Petroleum Refining and the Petrochemical Industry in very limited numbers. Molds are needed to increase the deliveries. However the plants of the USSR Ministry of Machine Tool and Tool Building Industry are not producing enough of the molds. And since the USSR Ministry of the Petroleum Refining and Petrochemical Industry does not have enough molds, the plates have become scarce. And so they use other plates, which are not nearly as good. The railway workers and the communications workers are not very actively seeking to eliminate this shortage.

Frequently the adoption of new polymer manufactured articles is delayed due to the lack of the appropriate materials. The support and vertical sliders /skol'zun/ on electric rolling stock are made of caproplast, which is cheaper and has a longer service life. But it is not being manufactured: there is no caproplast.

I had a talk with the manager of the division for the use of polymers in railroad transport of the VNIIZhT, I Sitkovskiy, who is a candidate for the degree of Doctor of Technical Sciences.

Sitkovskiy says, "In the decisions of the 26th Party Congress the task is set to develop the production of new polymer materials and of the manufactured articles that are made of polymers. Our collective is doing everything possible to expand the use of polymers in all areas of railroad transport. But, unfortunately, far from all of our recommendations are being rapidly put into use. In particular, we have proposed replacing wooden grain shields with dornite /dornitovy7 shields. Analysis shows that during the mass grain shipment period there are as many as 600,000 shields in use. Over the winter approximately 400,000 of these shields disappear without a trace. As a result it is necessary to manufacture this many new ones each year. The cost of each wooden shield is more than 22 rubles - the cost of a dornite shield is 14 to 17 rubles. It turns out that the adoption of the new shields will make it possible to save more than 110,000 cubic meters of lumber and nearly four million rubles per year. The job is certainly worth doing."

It would seem that the managers of the Railroad Cars Main Administration need to demonstrate some persistence. In the shortest time possible they need to organize the manufacture of a large batch of such shields, to test them thoroughly and to make a decision about producing them on a mass basis. On the contrary, no. They say that their hands are tied.

The lofty phrase "the economy must be economical - such is the requirement of the times", which was pronounced by Comrade L. I. Brezhnev in his report to the 26th Party Congress, was perceived by all Soviet workers as a guide for action. It is very important to use material resources rationally and thriftily. The use of polymers offers very extensive opportunities to do this. There must be no barriers to the adoption of parts and units made of polymers in railroad transport.

8927

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## RAILROAD

### DELAYS IN COAL DELIVERY CAUSED BY RAILROAD CAR SHORTAGE

Moscow GUDOK in Russian 23 Sep 81 p 1

/Article by V. Sbitnev, GUDOK correspondent, Krasnoyarsk: "GUDOK's Fuel Dispatch: Disruptions in the Coal Conveyor"7

/Text7 Since the beginning of the year coal loading on the Krasnoyarsk Railroad has been handled rather well. This is shown by the fact that the work results for the first and second quarters has earned the collective of the railroad line, for which coal is one of the most important kinds of cargo, the Challenge Red Banner of the USSR Ministry of the Railways and the Trade Union Central Committee. The railroad began the second half of the year with a surplus equal to nearly a half million tons of fuel. But August has passed and for the first time in many months the plan for this key indicator is unfulfilled.

September was also a bad month for the railroad. Thousands of tons of the fuel was undersupplied by the Krasnoyarsk division. The consumers of coal from Khakasiya did not receive their full delivery from the Abakan division. It is not just the railroad workers but the coal industry workers as well who are responsible for the disruptions in planned assignments. Here is just one example. On 15 September 400 of the very scarce gondola cars were not made available at the basic coal loading station of Chernogorskiye Kopi at the assigned times. This is the number of gondola cars required by the coal industry workers at this station for a 48 hour period..

The above-norm idle time of empty cars is making an already tight situation with loading resources worse. From the beginning of the month the railroad has been chronically undersupplied with gondola cars from neighboring railroads. Although the situation has somewhat improved in the past several days, the total result is a loss: from the east in the direction of Tayshet more than 200 gondola cars have failed to materialize; from the west through Mariinsk the figure is 800.

At this point it is necessary to make one reservation. The neighboring Kemerovo Railroad is providing the Krasnoyarsk Railroad empty cars by means of a total account, so to speak: the number of gondola cars that reach Mariinsk are then credited to fulfillment of the regulatory assignment. As a result the Krasnoyarsk railroad workers are underestimating the number of gondola cars needed for coal by several hundred.



How can this be? There is no secret involved. Through Mariinsk to Krasnoyarsk 2,660 gondola cars were to have been supplied for the two week period. Only 2,223 have been received. The shortage is apparent. But 427 of the cars that were not received were called "their own" by the dispatchers. Of course, these cars are not the personal property of the Kemerovo Railroad; they were sent to the Krasnoyarsk workers by someone to pick up Krasnoyarsk timber and are not subject to being loaded with fuel. Here is what happens: the regulatory assignment is nearly complete, but there is nothing in which to ship coal.

At present only the Achinskoye division is confident of fulfilling the month's assignment. I called the division and was answered by the senior dispatcher, A. Korzh. His voice was cheerful: "The Nazarovo station has shipped more than 30,000 tons in excess of the state plan, although at the end of the first ten-day period we experienced difficulties with empty cars. The Dubinino station has shipped almost the same amount; Dubinino ships coal from the Berezovskiy open pit mine of the Kansk-Achinsk fuel and power complex.

The volume of fuel extraction at the well-known KATEK /Kansk-Achinsk Fuel and Power Complex/ is not yet great - less than a million tons per year. But even with this amount the railroad workers on the Achinskoye division have their share of problems because the development of the track system is proceeding very slowly in this area.

For example, the rail approach to the open pit mine was built to handle no more than ten railroad cars per 24-hour period, and they are now loading more than 30. The division of the railroad has been forced to maintain its own diesel locomotive here. Railcar demurrages frequently exceed the established norm. The small Dubinino station is located in the midst of new construction and is experiencing increasing difficulties in processing freight. This includes forwarding Berezovskiy fuel to customers.

8927

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## RAILROAD

### CAUCASUS RAILROAD PROJECT DESCRIBED

Tbilisi KOMUNISTI in Georgian 1 Aug 81 p 2

[Article by Gruzinform correspondent M. Traskunov under rubric "A Task of the Near Future": "The Arkhoti Variant"]

[Text] Today another party of surveyors of the Caucasian Project Planning Institute for Railroad Transport took off by helicopter from the Tbilisi Airport to the Assa River Valley (in the Chechen-Ingusheti ASSR), where topographic planning is underway for the future Transcaucasus Railroad. It is impossible to get there by other means of transportation. But if people have trouble getting there, how are they going to build a railroad over the mountains?

Our republic faces a difficult task in the five-year plans to come.

"You are raising the question of building a through line across the Caucasus," said Comrade L. I. Brezhnev at the festivities dedicated to the 60th anniversary of the Georgian SSR and the Georgian Communist Party. "The idea has been around a long time. A construction project like this entails enormous difficulties. But the lack of such a railroad creates its own difficulties. The time has come to start tackling seriously this difficult engineering job, which is so vital economically."

The construction of a railroad across the Caucasus was long the dream of the leading figures of Georgia and Russia. The history of the idea goes back almost a century. Drafting of the first plan was participated in by the famous French engineer Eiffel, who built the 300-meter steel tower that stands as the symbol of Paris and the technical achievements of the 19th century. At that time, the distinguished Georgian publicist and scientist Niko Niloladze asked Eiffel for help in planning a through railroad line across the Caucasus. Eiffel sent two engineers; they drafted a plan, but it never made it off the shelves in the Russian Railways Ministry....

Over the decades, Russia's best engineers studied various alternatives to select the route by which the line should cross the range. They submitted a number of proposals, but they were already giving preference to the "Arkhoti Variant" as the shortest route to connect Vladikavkaz with Tbilisi. The biggest problem would be the 24-km Arkhoti Tunnel. Russia did not have the experience to build a tunnel of that size. Nevertheless, a conference attended by Swiss scientists and engineers in 1912 concluded that there were no insurmountable obstacles to constructing a tunnel that big.

Realization of the idea of building the uniquely difficult Transcaucasus Railroad became possible only in the Soviet era. Numerous topographical, geological, seismic, and other surveys of the route were made. Detailed studies were made of the Arkhoti, Kvanami, Gori, and other alternatives. The Arkhoti plan turned out to be very close to the one chosen early in the century. General planning of the project was assigned to the Caucasian Project Planning Institute for Railroad Transport, with distinguished Soviet surveyor N. V. Svanishvili to serve as chief engineer. USSR Gosplan and USSR Gosstroy selected the Arkhoti route, basically approved the project's technical-economic substantiation, and recommended some additional modifications.

What is "the Arkhoti Variant"?

From the north, the Transcaucasus Railroad will connect to the double-track North Caucasian Railroad in the area of Beslan Station, run through Dalakovo Station (going around Ordzhonikidze), the new Tarskaya Station and the Malyy Tarskiy Tunnel, then head toward Tarchil Station and, finally, enter the Arkhoti Tunnel, which will be one of the biggest and most complex engineering structures on the route. Leaving behind three more stations, trains emerging on the south side of the Caucasus will join the Transcaucasian Railroad at Zages Station between Mtskheta and Tbilisi. The Transcaucasus Railroad will total a little over 180 km.

Experts believe that the Arkhoti route is best in terms of cost, operating indicators, local terrain, and geological and climatic features.

The route will run at 1100 meters above sea level. In order to prevent snowslides, avalanches, and other natural hazards from blocking the trains, it will be necessary to build high retaining walls, dugways, kilometers-long viaducts, and bridges. More than one-third of the route will pass over and through engineering structures. In addition to Arkhoti, the largest, another 37 tunnels are to be built, totaling about 17 km in length.

By reducing the circuitous rail route, the Transcaucasus Railroad will shorten the distance from Moscow to Tbilisi by 905 km. Specialists calculate that this will save 50 million rubles annually. The route will help to boost Transcaucasia's economy, eliminate all the difficulties in transport services to the resort areas, and overcome the freight transport difficulties the southern portion of the country has been experiencing in the last while.

A unique railroad will run through the narrow Aragvi and Terek valleys. It will be Transcaucasia's project of the century, embodying the leading technical thought of the 20th century and realizing the cherished dream of many generations.

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## RAILROAD

### BRIEFS

VOROSHILOVGRAD DIESEL LOCOMOTIVE PRODUCTION--Ninety-six percent of all Soviet mainline diesel locomotives are produced by the Voroshilovgrad Production Association "Voroshilovgradteplovoy". The collective of the association is constantly improving its product. Now it is creating new models of locomotives, which will pull large-freight trains on the Baykal-Amur Mainline Railroad. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 19 Jul 81 p 27 8927

IDZHEVAN TUNNEL COMPLETED--The Idzhevan tunnel in Armenia has been handed over for rail laying ahead of schedule. The completion of the underground passage is an important stage in the construction of the railroad line between Idzhevan and Razdan. /Text/ Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 81 p 37 8927

KUZNETSK PLANT PRODUCING RAILS--The production of durable, long-lasting railroad rails has been assimilated by the Kuznetsk Metallurgical Combine imeni V. I. Lenin. This year the enterprise will produce 25,000 tons of such rails. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 33, Aug 81 p 37 8927

NEW LOCOMOTIVES FOR THE BAM--The Malyy BAM has received truly Herculean strength in the form of the new locomotives from the Voroshilovgrad Diesel Locomotive Building Plant. The new locomotive is designated the 3TE10M. This three-section diesel locomotive is one and a half times more powerful than its predecessor, the 2T10V. The new vehicle was the first to be assimilated by the locomotive brigade headed by V. Chirva. The new locomotive easily pulled a trainload of Neryungri coal, which exceeded the previous weight norm by nearly 1,000 tons. By the end of the year the park of the new railroad line will be augmented by 20 powerful locomotives. In connection with this it is being proposed to increase the speed of the trains by 10 kilometers per hour, bringing it to 75 kilometers per hour. The high quality of the track also makes this possible. V. Biryukov in Tynda. /Text/ /Moscow GUDOK in Russian 15 Jul 81 p 27 8927



NEW PRODUCTS FOR THE BAM--Kiev. A batch of thermoactive covers has been shipped from Kiev to the site of BAM construction work. The mainline builders are already familiar with this product, which was developed by Ukrainian scientists. During tests the experimental models were able to withstand the high rates of concrete pouring work in the winter cold, heated the railroad cars that are used to house the workers, and protected hundreds of tons of vegetables from freezing. The new heating devices, which were manufactured using carbon graphite fibers, are economical in electric power consumption, long lasting, and quickly attain the rated temperature. This elastic covering is made of thermoplast, polymer resins, varnishes, rubber and vulcanized rubber and a pressed current conducting fiber. Depending upon its intended use it can be manufactured in the form of water proof strips or sheets covered with a thin layer of metal. The sphere of use for the new coverings is practically unlimited. The experimental-industrial production of the "electric blankets" has been organized at an enterprise in Kiev. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 29 Jul 81 p 17 8927

HEAVY TRAINS ON BALTIC RAILROAD--One in three freight trains on the Estonian Division of the Baltic Railroad Line is a heavy train. Since the beginning of the year these heavy trains have transported more than three million tons of national economic product in excess of the weight norm. The majority of the heavy trains have been switched to burning the diesel fuel that has been saved by the locomotive brigades of the Estonian Division. This represents a considerable amount above the socialist pledges that were made for the first year of the 11th Five-Year Plan. /Text/ /TALLINN SOVETSKAYA ESTONIYA in Russian 18 Aug 81 p 37 8927

YUDINO RAILROAD TERMINAL--The first stage in the modernization of the Yudino railroad terminal has been completed successfully. A new station park, equipped with automatic and remote control devices, has been built here. The locomotive servicing base has been expanded for supplying locomotives with fuel, lubricants and other materials. The putting into operation of the new equipment inspection point of rolling stock and compressor units makes it possible to rapidly prepare trains for long trips. During the modernization work the stretch of tracks on the Yudino to Observatoriya sector was nearly tripled. Within a six-month period millions of tons of additional national economic cargoes were shipped through the transformed Yudino transportation terminal. By the end of the current five-year plan the entire sector adjacent to the Yudino transportation terminal will be switched to electric locomotive traction. A. Motkov, correspondent for SOVETSKAYA TATARIYA /Text/ /Kazan' SOVETSKAYA TATARIYA in Russian 7 Jul 81 p 27 8927

MONITORING QUALITY OF RAILS--Workers in the divisions of metals and track of VNIIZhT in cooperation with scientific research institute and the experimental design institute on the automation of ferrous metallurgy as well as the PTKB /possibly production and technical design bureau/ of the USSR Ministry of the Railways' Lines Main Administration and the rail welding enterprises of the Urals and Moscow railroads have developed measures to improve the use of the operating resource of rails. This is achieved by laying rails in accordance with the indicators of their quality determined by their indestructible features.

Rails are broken down into groups depending upon their hardness, the extent that the metal is contaminated, and the curvature and lack of smoothness in the surface of the rolling. A special piece of equipment is used to monitor quality. Operational tests have shown that rails of an increased quality possess a 1.9-fold increased wear resistance and a 2-fold resistance to the formation and development of contact-fatigue defects. Increasing the service life of rails will save not less than 9 million rubles per year. /Text/ /Moscow GUDOK in Russian 11 Sep 81 p 27 8927

LONGER RAILS--Tikhoretsk, Krasnodar Kray. At the experimental railroad tie impregnating plant a highly productive flow line for manufacturing glue-bolt splices has been put into operation. It is organically registered under the technical equipment of the rail welding shop, the product of which is sections of steel track 800 meters in length, which are welded using the seamless method. Ordinary 25-meter rails are used in the manufacturing process. Such super-long lengths, when installed on the bed of the railroad, reduce wear of the rolling stock and railroad cars and decrease breakage of the cargoes being shipped. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 9 Sep 81 p 17 8927

FIBER GLASS WEDGES--V. Antonov. The use of shaped fiber glass wedges during the repair of traction electric motors has been included in the plan for the adoption of new technology of the USSR Ministry of the Railways' Main Administration for Repairs to Rolling Stock and the Production of Spare Parts. For this purpose VNIIZhT and the Smelyanskiy electromechanical repair plant of the USSR Ministry of the Railways and the USSR Ministry of the Electronics Industry have proposed a new fiber glass SPP-EY that is based upon a nonwoven glass fiber and a bonding epoxy resin. The use of these wedges in place of those now in use that are made of sheet textolite and glass textolite make it possible to simplify the production cycle and to do away with several manual operations. It also makes it possible to improve the conditions of work from a health viewpoint and to cut back on the use of a material that is in scarce supply. All of this makes it possible for the TsTVR plants of the USSR Ministry of the Railways to reduce the labor intensiveness of the work in procuring wedges and anchors of the traction electric motors by 100,000 man-hours per year. /Text/ /Moscow GUDOK in Russian 11 Sep 81 p 27 8927

ELECTRIFICATION OF KAZAN' LINE--The electrification of the railroad mainline from Moscow to Kazan' to Sverdlovsk is proceeding at a quickened pace. At the same time the modernization of the largest locomotive depots in Yudina and Kanash is underway. It is planned to also build a new depot for the repair of passenger electric locomotives, which will be serviced by all lines from the Druzhinino station to Cherusti. The switch to electric traction will make it possible to increase the throughput capacity of the Kazan' line 3.5-fold. /Text/ /Moscow IZVESTIYA in Russian 8 Sep 81 p 1/ 8927

CEMA NATIONS HELP THE BAM--V. Monakhov, correspondent of the newspaper STROITEL' BAM. A new Czech-made excavator has appeared in Mechanized Column No 131 for completing the bed of the Western Sector of the main-line. The excavator was created on the base of the well-known automobile, the Tatra. The excavator is high-speed, very maneuverable and therefore very convenient for being shifted to far flung places on an operational basis. Today the Zapbamstroymekhanizatsiya /Western BAM mechanized construction trust/ trust is using several of these excavators. They have been delivered to the BAM in accordance with a cooperative program between the CEMA member nations. /Text/ /Moscow GUDOK in Russian 23 Sep 81 p 17 8927

CSO: 1829/17

## OCEAN AND RIVER

### USSR MINISTER OF MARITIME FLEET DISCUSSES HIS AREA

Moscow AGITATOR in Russian No 12, Jun 81 pp 28-30

[Article by T. Guzhenko, USSR Minister of the Maritime Fleet; "On Maritime Lines"]

[Excerpts] The Maritime Fleet is an important component part of the country's single transportation system. It has a leading place in supplying cargos for the actively developing areas of the Far North and Far East, and also in meeting the needs of USSR foreign trade.

At the beginning of the 11th Five-Year Plan the 16 steamship companies of the branch possessed 1,784 transportation vessels with a total deadweight of 18.6 million tons.

Today in a single year the USSR Maritime Fleet hauls more than 220 million tons of different cargos. Last year ships under the red flag went into 1,250 ports of 124 states of the world.

The workers of our branch completed the advanced fulfillment of the assignments of the 10th Five-Year Plan for the delivery of cargos in coastal sailing on 24 October and in foreign sailing on 14 December 1980. The workers of our ports and ship repairing enterprises also fulfilled their plans ahead of schedule.

In accordance with decisions of the party, qualitative changes have taken place in the character of maritime shipments for the areas of the Far North, Siberia, and the Far East. Thus, the western sector of the Northern Maritime Route from Murmansk to Dudinka has been turned into a year-round main route. Winter freight supplies for the Arctic by icebreaker-transport vessels with the help of powerful icebreakers and with freight unloaded onto land floes has become an important and fundamentally new achievement.

Last year for the first time, along with traditional cargos, more than 80,000 tons of large-diameter piping was shipped for gas pipeline builders along the Northern Maritime Route with a roadstead transfer to river vessels in the mouth of the Ob'; this made it possible to free 3,500 railroad flatcars for the economy. Also for the first time, a unique direct delivery of three heavy hydro-turbine wheels in assembled form was made from Leningrad to the Sayano-Sheshensk Hydroelectric Power Station. This shortened the installation time of the first hydro-unit.



The expedition to the North Pole on the "Arctika" atomic ship and the 1978 run by a transport ship with freight aboard in the accompaniment of the atomic icebreaker "Sibir'" from Murmansk to Magadan is not only of historic, but also of scientific and practical importance.

The work of "Interlikhter," the international shipping enterprise of the socialist countries which was created in 1978 on the basis of an intergovernmental agreement between the People's Republic of Bulgaria, Hungarian People's Republic, the USSR, and the Czechoslovakian SSR, has become a concrete expression of the realization of the Overall Program for the Socialist Economic Integration of the CEMA countries in the field of maritime shipments. The enterprise has been successfully operating two lighters--the "Yulis Fuchik" and the "Tibor Samuelli" --which deliver freight from the shipper to the receiver without transshipments. The lighters do not need expensive deep-water docks and crane equipment, since the loading and unloading of these vessels is performed in the roadstead by special synchronic elevators which have been installed in them. Freight delivery time is decreased and the freight is better protected, which, in the final analysis, results in a substantial decrease in transportation costs.

We are devoting paramount attention to improving planning and labor organization and management. The Shchekino method has become widespread in the fleet. Thanks to occupational doubling up, in four years of the last five-year plan around 6,000 people were freed, and labor productivity in shipments increased by six percent. In the ports efforts have been directed toward a fuller use of the possibilities of the enlarged overall teams which have been created on the initiative of A. Baranovskiy, a docker-mechanization specialist team leader at the Il'ichevsk Port and Hero of Socialist Labor, an initiative which has been approved by the CC CPSU. By the end of the 10th Five-Year Plan more than 79 percent of the dockers were working in such teams.

A shift has been carried out in the branch to an overall continuous intercoordinated planning system for the work of related types of transportation within the transportation network. It makes it possible to attain the best final economic result with the fullest and most efficient use of material and labor resources. The introduction of a single continuous schedule plan for a transportation network which was begun on the initiative of the Leningraders and approved by the CC CPSU is becoming increasingly widespread. By the end of the 10th Five-Year Plan this experience was introduced on the basis of maritime ports in 38 transportation networks.

The most substantial results have been achieved by the inspirers of the initiative. During the years of work on the basis of a continuous schedule plan labor productivity at loading and unloading in the Leningrad Port has increased by 36 percent, and the cost of transferring freight has decreased by 16 percent. On the average, railroad car processing time decreased by 1.5 hours.

The shifting of some freight from railroad to river and motor vehicle transport has made it possible to release more than 35,000 railroad cars and to move an additional 1.5 million tons of freight along the steel highways. The economy of lay

time which was obtained on the basis of the acceleration of the processing of the fleet is equivalent to releasing six large vessels for year-round work.

Large and responsible tasks for the 11th Five-Year Plan have been put before the branch by the 26th CPSU Congress. Maritime transport freight turnover is to increase by eight-nine percent. This means that its increase alone during the five-year plan will exceed the annual freight turnover of the branch in the middle of the 1950's. Specialized ships will be added to the fleet and the capacities of ports and ship repairing enterprises will grow. The Soviet Union is the world's only country which has an atomic ice-breaker fleet. During the new five-year plan it is also planned to begin to outfit transportation ships with atomic power units.

Today a qualitative new approach to their work is demanded from the country's transportation workers. Not merely to provide the fullest satisfaction for the needs of the economy and the population for shipments, as was planned during the previous five-year plans, but to provide the full and timely satisfaction of these needs--this is how the task is formulated in the Basic Directions.

The fulfillment of this important demand determines the necessity to self-critically evaluate our possibilities, discover shortcomings, and concentrate efforts on overcoming them.

One of the worst bottlenecks is the disproportion in the development of the fleet and of the ports. The present practice of the centralized distribution of capital investments between the fleet and the coastal base leads to the development of the ports lagging behind the development rates of the fleet. This to a large extent explains why ships which arrive in ports on time carrying essential national economic freight on board are frequently compelled to stand in the roadstead waiting for a dock to become free.

The practice of continuous intercoordinated planning is not being introduced as successfully in other ports as it was in Leningrad. Inertia and the habit of working in the old way get in the way.

The chief attention has to be concentrated on increasing the efficiency of the transportation process and on optimizing it. It is sufficient to cite these figures: by the end of 1985 the Maritime fleet will increase by 3.6 -- 4 percent, and the amount of foreign trade shipments by 35-40 percent. Therefore, the capital investments which are allocated to the branch will be used by us above all to accomplish reconstruction and technological tasks which on the basis of scientific and technological achievements will make it possible to increase to a maximum the capacity of the ports--today's most vulnerable link in the transportation chain.

In addition, labor productivity must be sharply increased. The way to do this is to introduce advanced and scientifically substantiated methods of labor organization and management. This includes a further dissemination in the fleet of the Shchekino method in combination with the use of substitute crews and with planning the social development of the steamship companies; the lengthening of the inter-repair period of the operation of ships on the basis of continuous tech-

nical servicing and preventive repairs by the seamen; a further development of container and package shipments; a continuation of the introduction of the experience of advanced enlarged overall teams and a wider use of team contracting and cost accounting in the ports and at ship repair enterprises; the creation of uniform shifts for port workers and railroad workers; and a struggle to economize material, financial, and labor resources.

Intercoordinated continuous operations planning for transportation networks is a powerful instrument for increasing efficiency. A shift to single overall social and economic development plans for all of the collectives which are members of a transportation network has to become a new step in this direction. This will make it possible to solve food, housing, and cultural problems much more successfully, to make contacts between related collectives closer, and to turn the transportation network into a commonwealth of labor collectives which is based not only on common production interests, but also on purely human intercourse. In the final analysis, this will make it possible to sharply improve production indicators and to increase the efficiency of our branch and of the country's transportation system as a whole.

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## OCEAN AND RIVER

### MINISTER DISCUSSES RSFSR RIVER FLEET

Moscow AGITATOR in Russian No 12, Jun 81 pp 30-31

[Article by L. Bagrov, minister of the River Fleet RSFSR: "Our River Transport Workers' Horizons"]

[Excerpts] Even a fleeting glance at a map convinces one of how saturated our country is with water arteries. In the European North, for example, the share of river transport workers in total freight turnover comes to 40 percent, while in Yakutiya and Tomskaya Oblast it is around 80 percent. In the republic as a whole, during the most intense summer navigation period the river fleet performs almost one-quarter of the rail and water freight turnover.

The virtue of this type of transportation is its high efficiency. Thus, the towing of 1,000 cubic meters of timber on rafts is four-five times cheaper than railroad transport. As for Siberia and the Far East, water shipments there are 10-15 times cheaper than truck shipments.

During the 10th Five-Year Plan river transport received large-capacity dry-cargo diesels and tankers, powerful push-tugs, and comfortable passenger vessels. Large river line ice-breakers designed to lengthen the navigation period went into operation. At the same time, ships with a small displacement for the so-called "side" rivers where shipping is limited by the shallow waters were also built. The reconstruction assignment for the Belomor-Baltic Canal was successfully fulfilled. The overall mechanization of loading and unloading operations was basically completed in the ports, and more than five kilometers of mechanized piers were commissioned.

The fleet's repair base has been developed. Shore enterprises have been outfitted with improved technological and special equipment. Construction has been completed on new instructional buildings and dormitories for the vocational and technical schools, public health and public catering facilities, and residential houses.

All of this has undoubtedly promoted an increase in the labor productivity of the branch's workers. As a result, compared to the Ninth Five-Year Plan, the volume of shipments has increased by 23.4 percent, and freight turnover has increased by 18 percent. Shipments in the areas of Siberia, the Far East, and the Far North have been performed at outstripping rates. In the petroleum and gas areas of



Tyumenskaya and Tomskaya oblasts, for example, freight deliveries have increased by 1.7 times.

During the 10th Five-Year Plan there was an intensive development of foreign trade freight shipments by mixed "river-ocean" ships whose freight turnover increased by 42 percent. River steamship companies gained experience in accident-free sailing under ocean conditions. After the end of the summer navigation period almost 200 ships have continued to operate in non-frozen maritime areas.

Our river transport workers have actively introduced the experience of Leningrad transportation workers which was approved by the CC CPSU. During 1980 alone railroad car processing time was reduced by 9.4 percent.

In the 11th Five-Year Plan we are faced with a responsible task: to increase the contribution of river transport toward meeting the economy's needs for shipments. Toward this end, a substantial strengthening of the branch's material and technical base has been planned, above all port works in the areas of Siberia, the Far East, and the North. The industrial development of these areas requires equipment, fuel, food, and materials supplied over long distances into the interior of areas which are frequently accessible only to the river fleet. For this reason, while for river transport as a whole the increase in freight turnover has been planned at the level of 19-20 percent, in the steamship companies of Siberia and the Far East it will increase by 28-32 percent.

The present navigation season will provide a serious examination for us. This year the amount of freight hauls will have to be increased by 4.9 percent, and freight turnover--by 7.4 percent. The freight flow will widen in the direction of Western Siberia, Yakutiya, and the country's most important enterprises and construction projects on the Volga, the Kama, and the Don.

The 26th Party Congress has called upon us to mercilessly reveal shortcomings in the practice of economic management, to evaluate situations critically, and to speak about problems and difficulties which arise. It is not possible to tolerate the fact that the task of switching freight from the railroad to waterways is still being accomplished slowly. In the river ports there is sometimes above-plan idle time by railroad cars being processed. On the rivers there are not enough specialized ships for the delivery of cement, fertilizers, and vegetables. River piers are still insufficiently outfitted, and those which exist are not always properly maintained.

Our river transportation workers are constantly planning to increase the amounts of shipments during the prolonged navigation period and in the ice so as by 1985 to increase shipments during this period by no less than 1.3 times. Toward this end, steamship companies, especially in Siberia, will be supplied with a new ice-breaker fleet.

The river fleet will be reinforced with component large-capacity diesel ships, dry-cargo barges, tankers, and other vessels. During the five years the plants and wharfs of the Ministry of the River Fleet will increase the production of non-self-

propelled ships by almost 40 percent.

A further dissemination of progressive labor methods will bring about an improvement of the fleet-use indicators. First of all, this includes the operation of large-capacity echelons whose introduction has won a group of captains the title of Winners of the USSR State Prize.

This method increases labor productivity and improves economic indicators. The lofty title of Hero of Socialist Labor has been awarded to one of the initiators of this method, a captain-second machinist's assistant of the "OT-2032" of the Western Siberian Steamship Company, and to I. Kopylov, a lathe operator of the ship-repair and ship-construction plant imeni Lenin of the "Volgotanker" Steamship Company.

Especially attention will be devoted to disseminating the experience of the crews of the "Volgo-Don-5009" diesel of the Volga United Steamship Company and the "OT-2024" of the Irtysh Steamship Company which have operated without average repairs for 7 and 10 years and without being during this period in navigation repair plants. There will be a further development of the cost accounting enlarged over-all teams of workers in ports and at enterprises. The collaboration of related enterprises will become stronger on the basis of the continuous operations planning for transportation centers.

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## OCEAN AND RIVER

### OVERALL MECHANIZATION AT RIGA PORT DESCRIBED

Moscow VODNIY TRANSPORT in Russian 20 Aug 81 p 1

[Interview with Ye. I. Kuz'min, chief production engineer of the Riga Port by correspondent V. Lushchevskiy; date and place not specified]

[Text] The broad program of work to further develop the overall mechanization of labor in water transport which is discussed in the appeal of the innovators of the Kaliningrad Merchant Marine Port is being studied with interest in the enterprises and services of the Riga Port. Our correspondent has requested of the port's chief production engineer, the Honored Rationalizer of the Latvian SSR Ye. I. Kuz'min, that he comment on the initiative of his neighbors and describe the ways of solving the problems touched upon.

[Answer] We believe,--comrade Kuz'min said, --that the Kaliningrad people have concentrated the efforts of rationalizers and inventors and of all of the innovators of their port on one of the most important problems for dockers today. Indeed, the fulfillment by maritime ports of the strenuous production program of the present five-year plan depends to a large extent upon the level of the overall mechanization of labor at loading and unloading operations. It is in this direction that ways have to be sought for an intensification of all types of port work and, consequently, an acceleration of the processing of ships and railroad cars.

Today, when the new five-year plan has gotten off to a start, in our collective, as with the Kaliningrad port workers, an endeavor is making itself felt on the part of all advanced workers to make even wider use of highly efficient equipment, to raise the level of the overall mechanization of loading and unloading work, and to achieve high work quality at each job with the least expenditures. Overall mechanization has not been achieved in the processing of sacked freight where we still have the largest expenditures of manual labor.

These unsolved problems are attracting great attention from production specialists and innovators. We already have a large number of proposals which in one way or another solve "bottlenecks." Some of these proposals are being realized. For example, a specialized railroad car ramp is being built for processing refrigerator freight. It will make it possible to perform the mechanized unloading not only of ordinary all-purpose closed cars, but also of refrigerator cars.

We are manufacturing a number of new attachments so as to expand the sphere of action of overall mechanization. One of our urgent and important problems is the mechanization of the labor of port workers and an increase in labor productivity in the processing of bagged freight. This task can only be fully accomplished, in our opinion, with the organization of packet shipments for such freight. This is confirmed by present-day practice. Sacks which are received in packets are re-loaded much more rapidly and without manual labor.

One would like to see greater attention to the problems of overall mechanization from the branch's scientific institutions and from our designing bureaus. An intricate problem has to be looked upon as a single complex and solved in an overall manner. We have in mind that with 100-percent mechanization progressive technological lines have to unfailingly be highly productive ones, but this does not always happen. Sometimes the employment of original innovations in the mechanization of labor comes into conflict with an increase in its productivity. Of course, in this event another path has to be sought.

We also need to have the help of the Ministry of the Maritime Fleet in solving the important aspects of the problem being discussed. For three years we have been unable to get an allocation of large capacity scales for weighing refrigerator car freight, or of specialized loaders adapted for work inside refrigerator cars. Such obstacles frequently limit work rates on an entire line and do not allow for the full mechanization of "bottlenecks."

As for us port workers, we will do everything possible to further develop the overall mechanization of labor.

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## OCEAN AND RIVER

### KALININGRAD PORT INTRODUCES OVERALL MECHANIZATION

Moscow VODNYI TRANSPORT in Russian 29 Aug 81 p 1

[Article: "The Initiative of the Kaliningrad Port Workers Has Been Approved"]

[Excerpts] The Boards of the Ministry of the Maritime Fleet and the USSR State Committee for Inventions and Discoveries, and the presidiums of the Central Council of the All-Union Society of Inventors and Rationalizers and of the CC of the Maritime and River Fleet Workers' Union have examined the question of "On Disseminating the Initiative of the Innovators of the Kaliningrad Merchant Marine Port in Maritime Transport Under the Slogan of 'The Maximum Level for Overall Mechanization.'"

It was noted at this joint meeting that the appeal by the innovators of the Kaliningrad Merchant Marine Port to all water transport inventors and rationalizers which was published in the newspaper VODNYI TRANSPORT (28, 7, 81) is directed toward the solution of one of our most important problems--a rise in the level of the overall mechanization of loading and unloading work.

The collective and the inventors and rationalizers of the Kaliningrad Maritime Port are constantly devoting attention to this important problem and have achieved high production indicators. At the end of 1980 the level of overall mechanization came to 93.1 percent. The economic effect from the introduction of new equipment, inventions, and rationalizers' proposals came to 600,000 rubles in two years. The port is making successful use of the technologies and equipment which have been created for loading ships of the "Ro-Ro" type, unloading bagged freight on single-use belts, and mechanized cleaning of raw sugar remains from holds, fastening steel rolls on flat cars, the mechanized reloading of boxed freight, the mechanization of the unloading of cellulose from railroad cars, the reloading of large-diameter pipes, and so forth. This did much to promote rhythmic work in the port and a stable growth of production indicators. On the basis of its results in the 10th Five-Year Plan, the port collective was awarded the Red Challenge Banner of the CC CPSU, USSR Council of Ministers, All-Union Central Council of Trade Unions, and the CC of the All-Union Lenin Young Communist League.

The port's inventors and rationalizers are solving the problem of the full liber-

ation of the port's workers from heavy manual labor, including the mechanization of auxiliary operations. For achieving high results in the field of the introduction of scientific labor organization, in 1980 the port collective was awarded the first prize and diploma of the All-Union Central Council of Trade Unions. The work of the inventors and rationalizers is conducted according to an overall plan which includes organizational, technical, economic, and social measures.

The participants of the meeting approved the work experience of the inventors and rationalizers of the Kaliningrad Merchant Marine Port in developing new technological processes, creating new and improving existing mechanization equipment for loading and unloading work, and in freeing dockers from heavy manual labor under the motto "The Maximum Level For Overall Mechanization."

The joint meeting bound the leaders, trade union committees, and councils of the All-Union Society of Inventors and Rationalizers of the Enterprises and Organizations of Maritime Transport to give wide dissemination to the experience of the inventors and rationalizers of the Kaliningrad Port. The chiefs of the steamship companies and ports have been charged with working out overall plans of organizational and technical measures to ensure a maximum level of overall mechanization of the kind in the plan of the Kaliningrad Maritime Port. In developing these plans use is to be made of the experience of collaboration with scientific research and planning and designing organizations, and also with other related types of transport, and the chairman of the republic and basin trade union committees and the chairman of the basin councils of the All-Union Society of Inventors and Rationalizers have been ordered to enlist a large group of inventors, rationalizers, and innovators into the development of the overall plans.

The division of transportation equipment of the State Committee for Inventions and the division of branch sections of the Central Council of the All-Union Society of Inventors and Rationalizers have been charged to take measures connected with the dissemination to other types of transportation of the work experience of the inventors and rationalizers of the Kaliningrad Port under the motto "The Maximum Level For Overall Mechanization."

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CSO: 1829/04

## OCEAN AND RIVER

### NEW BULK-CARGO CARRIER

Tallinn RAHVA HAAL in Estonian 19 Aug 81 p 2

[Article by V. Mikkonen: "New Bulk-Cargo Carrier"]

[Text] We stood on the pier and waited for the new ship. And soon there came into view the modern motor ship "Yuri Klementyev."

The ship was launched in the Rauma-Repola shipworks of Uusikaupunki, and it is a universal bulk cargo carrier, designed to ply the Saima canal line. The ship is named after Yuri Klementev. Having served since 1973 as the USSR representative for Saima canal, "Yuri Klementev" has contributed greatly to strengthening Finnish-Soviet economic and good-neighborly relations.

We asked Captain Yevgeni Petukhov to describe the vessel.

"This is not the usual kind of ship," states the captain. "She can carry all kinds of different cargo--containers, paper, lumber. The crew numbers only 16. Half of them are officers. The vessel can be used both on the Saima line and other waterways."

The steering room is full of visitors. The sailors explain the purposes of the various machines. The ship is veritably full of automatic facilities. Our attention is drawn to a modern domestically manufactured radio locator station that allows the simultaneous observation of five objects.

From above we can easily look into the open cargo space with an area of 700 square meters. We climb down into the engine room, the ship's heart. Heat of the still uncooled machines greets us. Second machinist Alexandr Solodyankin explains:

"The ship has a main motor from the Wartsila factory with a 2500 HP capacity. The main advantage of the motor is its compactness. Therefore the engine room is much smaller. The ship can sail at up to 12.5 knots. There is also an automatic installation that allows the machine to be directed from the captain's bridge. And thanks to automation the ship can sail without the help of towboats."

At this moment "Yuri Klementyev" is already on a voyage. The crew wants to meet successfully all socialist obligations in the first year of the 11th Five-Year Plan.

Photo: Steering room [not reproduced]

## MISCELLANEOUS

### TRANSPORTATION IN THE 11TH FIVE-YEAR PLAN

Moscow MORSKOY FLOT No 9, Sep 81 pp 2-4

[Article by D. Zotov, chief of the transportation division of Gosplan USSR: "Transportation in the 11th Five-Year Plan"]

[Text] In 1981 the entire Soviet people is enthusiastically laboring over the fulfillment of the plan for the 11th Five-Year Plan whose basic directions were approved by 26th CPSU Congress. A chief task was set--to ensure the further growth of the well-being of Soviet people on the basis of stable and consistent economic development, an acceleration of scientific and technological progress and the shifting of the economy to an intensive path of development, a more efficient use of the country's potential, and a thorough economy of resources of all types and an improvement of the quality of work. The 26th CPSU Congress defined the ways to increase the efficiency of social production as a result of a comprehensive intensification of the economy.

Comrade L.I. Brezhnev said in the Summary Report to the 26th CPSU Congress: "Every branch is faced with its own important tasks and specific problems. But there are problems which embrace all of the spheres of the economy and the chief one is to complete the changeover to a primarily intensive path of development.... Planning and scientific and technical and structural policy have to be subordinated to the accomplishment of this task." These statements apply in full to transportation also.

The progressive development of our socialist economy and the improvement of the structure of social production and of its territorial organization have given rise to a continual increase in the work of transportation to ship freight. The growth of national income is the basis for the improvement of the well-being of Soviet people which envisages a substantial increase in material goods and also transportation services.

In order to provide for the growing volume of shipments a number of major measures were carried out during the past five-year plans to develop and improve the country's transportation system so as to satisfy the constantly growing needs of the economy and population for shipments.



At the beginning of the 11th Five-Year Plan the country's transportation system had a developed network and was fully supplied with rolling stock, fleet, trucks, and an airplane-motor pool which basically satisfied the modern requirements of scientific and technological progress. The operating length of general use railroads increased from 125,800 kilometers in 1960 to 142,000 kilometers at the end of 1981, including an increase in the length of electrified lines from 13,800 kilometers to 44,000 kilometers, lines equipped with automatic braking and dispatcher centralization--from 26,500 to 80,000 kilometers, and two-track lines--from 34,100 to 47,000 kilometers.

Railroad transport plays a leading role in the transportation system. It accounts for more than 60 percent of the freight turnover on domestic routes and for 38 percent of the passenger turnover outside of cities. During the years of Soviet power while the operational length of the railroads doubled, their freight turnover increased 57 times. Our railroad transport whose share of the length of the world's railroads comes to only 11 percent performs more than 53 percent of the world's freight turnover. This speaks of work of large dimensions and intensity and of the heavy workload on our railroads.

Maritime transport which performs around 12 percent of the total freight turnover is the basic type of transport which takes care of shipments for the areas of the Far North and Far East which are developing at rapid rates, and also for foreign trade, including the exportation of transportation services. More than 92 percent of the maritime fleet's freight turnover is accounted for by foreign sailing. Ships under USSR flag visit more than 1,400 ports in more than 120 countries.

River transport performs less than four percent of the country's freight turnover; however, it is of very great importance for the economic and social development of the North, Siberia, and the Far East where in most cases it serves as the basic type of transport for the delivery of mass freight.

Trucks perform more than six percent of the economy's freight turnover, while buses perform 40 percent of the hauls of general-use passenger transportation. Truck transport is the basic freight carrier in the country over short distances and on lines on which there are no main types of transportation (in rural areas to supply most of the industrial enterprises and construction sites; for inter-city rush deliveries and for the shipment of freight in special truck rolling stock).

The proportion of pipeline transport in freight turnover which at the present time comes to 25 percent for gas, petroleum, and petroleum products is one of the indicators of the technical level of the transportation system. More than 90 percent of the petroleum which is transported in the country is pumped through pipelines.

Air transport accounts for 18 percent of the country's passenger turnover. In a number of places air transport serves as the basic means of moving passengers and even freight. Aviation is playing a large role in the development of a number of areas of Siberia, the Far East, and the Far North. Extensive use is made of it in the economy. Chemical air operations in agriculture and forestry are performed every year on an area of more than 450 million hectares. Aeroflot airplanes

provide transportation relations over an "air bridge" with 90 of the world's countries.

Industrial transport which directly services production plays an important role in improving the work of the transportation system and of the branches of production. Its equipment complex consists of 135,000 kilometers of railroad track, 300,000 kilometers of motor vehicle roads, a powerful railroad and motor vehicle rolling stock pool, a large number of ships, continuous transport equipment, and others.

The development of transportation is closely connected with the development of the economy's productive forces.

Taking account of the distribution of freight flows on the railroad network, second tracks and two-track insertions were built basically on routes which provided economic transportation relations between Siberia and the Urals, the European part of the country, and Central Asia and Kazakhstan and between the Urals and the Center, and also at the approaches to large sea and river ports and railroad centers.

In addition to the continued construction of the Baykal-Amur mainline and to the commissioning in the 10th Five-Year Plan of the Tynda-Berkakit line which is creating the preconditions for the formation of a South Yakutsk territorial-industrial complex, a number of other railroads have also been commissioned for the purpose of lightening the load on the most strained routes, the industrial development of new areas, and shortening the distance of shipments. Among them is the Beloretsk-Karlaman section of the South Siberian mainline with whose construction the formation of one more direct outlet from the eastern areas to the Povolzh'ye and the Center has been completed. In addition to improving the economic relations of the Magnitogorsk industrial area, this route will take upon itself part of the transportation flows, including coals, which go from the East to the European part of the country.

The Surgut-Nizhnevartovsk and the Surgut-Urengoy railroads are being built in order to improve services for the petroleum and gas areas of Western Siberia.

At the same time, the reequipping of transportation of all types was carried out. The transfer of the railroad to electric and diesel traction is practically completed. The entire freight car pool has been equipped with automatic couplings and automatic brakes, ~~inefficient~~ two-axle cars have been completely removed from circulation, the specialized car pool has been added to, and the average freight capacity of a car has increased to 62 tons. More than 50 percent of the locomotive pool is accounted for by powerful electric locomotives, and more than 30 percent by modern diesel locomotives with a capacity of 6,000 horsepower.

Maritime transport has received a development which ensures the independence of our foreign trade from the world charter market. The total deadweight of the maritime fleet has exceeded 18 million tons. It includes tankers with a full freight capacity of 150,000 tons, bulk tankers with a capacity of 100,000 tons,

atomic ice cutters, and seagoing railroad ferries. The capacities of seaports in all basins have been substantially increased. New ports have been built: Il'ichevsk in the Black Sea, and Nakhodka and Vostochnyy in the Far East.

Seaports in all basins have been further developed. The ports have been outfitted with specialized equipment and with complexes of highly productive machinery and mechanisms. Container terminals have been built.

The maritime ferry crossing which is in operation between the Soviet port of Il'ichevsk and the Bulgarian port of Varna and through which as early as 1980 more than two million tons of cargo passed is a very important integration measure.

In 1980 the Ministry of the Maritime Fleet shipped more than 225 million tons of cargos.

The share of diesel power on seagoing ships has reached approximately 90 percent, with the remainder represented by modern steam turbines. A substantial part of the tonnage of the dry cargo fleet is made up of specialized vessels.

Air transport occupies one of the leading places in the transportation system for passenger hauls. In 1980 it carried more than 103 million people. Aeroflot lines now come to more than 970,000 kilometers. Air transport is playing an important role in developing the new areas of Siberia, the Far East, and the Far North. In a number of cases air transport serves as the basic means of delivering passengers and freight. Leading places are occupied in the civil air fleet by the IL-62M, TU-154M, and TU-134A turbo-jets; and the IL-86 air bus with a capacity of 350 passengers, the YAK-42 for work on average distance routes, and the IL-72 for transporting freight have come onto the line. There has been a further development of airports, technical aviation bases, automated flight control equipment, the automatic sale of tickets, centralized fueling, and an improvement of passenger services.

New passenger buildings and airport waiting halls have been built in Sheremet'yevo, Vnukovo, Tallinn, Rostov-na-Don, Vladivostok, Kuybyshev, Murmansk, Orenburg, Kaliningrad, Frunze, and Yerevan.

Motor vehicle transport has become more important. In 1980 the hauls by general-use motor vehicles alone came to 6.4 billion tons and more than 42 million passengers. In all, in 1980 motor vehicle transport hauled more than 24 billion tons. Motor vehicle transport has become an inseparable technological component in such ministries as the Ministry of the Coal Industry, Ministry of Nonferrous metallurgy, Ministry of the Construction Materials Industry, and others. International shipments by motor vehicle transport have developed. The structure of the freight truck pool has been improved; the proportion of trucks with a large freight capacity and truck-trains has increased; and production has begun on dump trucks with a capacity of 78 tons and dump truck-trains with a capacity of 120 tons. As a result, the proportion of large-capacity trucks and truck-trains increased from 12 percent in 1975 to 21 percent in 1980, while the share of low-capacity trucks increased from nine to 14 percent.

Union and republic roads, and also oblast and local ones, have been built and reconstructed. Construction has been completed on the very important highways Moscow-Volgograd, Leningrad-Murmansk, Kuybyshev-Ufa-Chelyabinsk, and Moscow-Kaluga-Bryansk-Sevsk. Such large cities as Ufa, Sverdlovsk, Chelyabinsk, and Tyumen' have been joined together by the state road system, and a large number of rayon centers, kolkhozes, and sovkhoses have received modern roads. The length of hard-top roads increased from 271,000 kilometers in 1960 to 795,000 kilometers in 1980.

Big changes have occurred in river transport which in 1980 hauled 565 million tons and around 150 million people. The fleet has been reinforced with large-capacity diesel ships and 5,000-ton tankers, and with barges and tugs which have made it possible to change over to heavy echelons (12,000 tons). Many comfortable passenger ships have gone into operation. Mixed river-sea ships are operating successfully. The total length of the navigable waterways comes to more than 120,000 kilometers, including 14,000 kilometers of artificial waterways. By the end of 1980 more than 80 modern locks were being operated on the waterways. The total length of mechanized docks came to more than 90,000 linear meters. The work of river transport is also becoming increasingly important for the development of Siberia and the Far North.

However, as a result of the outstripping growth rates of the productive forces of Siberia and the Far East, the necessity for moving a large amount of freight, especially fuel, from these areas to the Center, and also of shortcomings in the transportation process, transportation is not yet fully providing for the economy's needs for freight and passenger hauls.

In the Summary Report of the CC CPSU to the 26th Congress of the Communist Party of the Soviet Union comrade L.I. Brezhnev pointed to the seriousness and scope of the problems which have developed in transport.

The "Basic Directions of the Economic and Social Development of the USSR for 1981-1985 and the Period Until 1990" defines a number of measures to intensify the use of existing fixed capital and develop the material and technical base of the country's transportation system. A number of organizational and technical measures have been mapped out. Especial attention here is devoted to improving the transportation process and improving the quality of equipment and the structure of rolling stock and of the fleet, to ensuring extensive specialization, to the introduction of new equipment, an improvement of planning management, and also to increasing the work coordination of transportation of all types. Great importance is being attributed to the mechanization and automation of all work in the economy, to eliminating manual labor.

One of the basic ways of mechanizing loading and unloading operations is the containerization and packetization of freight. By 1990 it is planned to basically complete the creation of a highly efficient container transportation system. In the 11th Five-Year Plan it is planned to increase the amount of freight shipments in all-purpose containers by 1.9 times in transportation as a whole, including 3.6 times in large-capacity containers. In addition, around 130 million tons of freight in containers and 430-480 million tons in packets is supposed to be shipped in 1985 by general-use transport.



In order to support this program it is planned to increase supplies of all-purpose and specialized containers, reusable and one-time flat cars, and slings for packeting timber materials, and also to master the production of new specialized transportation transshipment equipment and to create 144 new container points. The realization of the measures to develop container and packet shipments will make it possible as early as 1985 to free more than 220,000 people from heavy physical labor and to decrease the expenditures for the production of packing and packaging by approximately 200,000 tons of metal and 13 million cubic meters of timber.

Basically, it is planned to complete the development of a complex of measures for the development of the automated management of the shipping process in all types of transportation, the introduction of progressive technology and automated management system, an acceleration of the development of the container system, an improvement of the work of transportation in international shipments, and a substantial improvement of passenger services.

The freight turnover of railroad transport is supposed to increase by 14-15 percent, and passenger turnover by nine percent. In order to improve equipment use it is planned to increase the weight of a train and to speed up the turnover of freight cars thanks to a decrease in idle time during freight and technical operations and also to an increase in train speeds.

The growth at outstripping rates of two-track and multi-track electrified railroads equipped with automatic braking and dispatcher centralization will be a characteristic tendency. During the 11th Five-Year Plan it is planned to commission 3,600 kilometers of new lines and 5,000 kilometers of double tracks and to electrify no less than 6,000 kilometers. The commissioning of production capacities is planned basically on the railroads of the Urals, Siberia, and the Far East where the largest increases in freight shipments are expected. To meet this need it is planned to open through traffic on BAM, to strengthen the Mid-Siberian mainline with outlets onto Glavsib and Yuzhsib, and to electrify the Trans-Siberian mainline to Khabarovsk and the Sverdlovsk-Kazan'-Moscow route. Plant and line repair bases will be developed. It is planned to deliver new mainline electric locomotives with a capacity of 10,000-11,000 kilowatts, and diesel locomotives with 4,000-6,000 horsepower. It is planned to supply 390,000 cars with more progressive characteristics and a broad specialization.

The freight turnover of river transport is supposed to increase by 19-20 percent and, in addition, there will be a substantial increase in its role in the eastern areas of the country. Measures will be worked out to prolong the navigation period on rivers with the corresponding addition of ice-breaking equipment. In addition, the river transport fleet will have added to it powerful pusher-tugs, barges for large-capacity echelons, mixed river-sea ships, and comfortable passenger liners.

The formation of a united deep-water waterways system of the European part of the USSR will be basically completed with the construction of a second lock of the Shchekino hydroengineering center and the reconstruction of the Belomor-Baltic Canal. It is planned to commission approximately 8,500 linear meters of mechanized docks.

Shipments by general use motor vehicle transport are supposed to increase by 1.4 times, which is more than the rail and air increases. In addition, a number of measures to increase labor productivity are planned. It is planned to increase the dieselization of the pool, to put 25-30-ton MAZ and KamAZ truck-trains into operation for the shipment of mass freight, and to increase supplies of trailers and semi-trailers and also of low-capacity (two tons) vehicles for transporting small freight (with occupation combining by driver, expeditor, postman), and so forth. All of this is supposed to produce a large economic effect. The dieselization of the motor vehicle pool alone will make it possible in 1985 to economize 4.5 million tons of liquid fuel in a conventional calculation in relation to 1980.

The accelerated development of the support network of the main motor roads is planned, as is the construction of general use roads connecting rayon centers and the central grounds of kolkhozes and sovkhozes. Work will be continued on building and reconstructing the most important main roads, in particular Moscow-Khar'kov-Simferopol', Moscow-Minsk-Brest, Chita-Khabarovsk-Nakhodka, and others. It is planned to put more than 60,000 kilometers of general-use motor roads into operation.

Civil aviation is being assigned an important role in taking care of passenger hauls, especially in Siberia, the Far East, and the Far North, and also in delivering freight which is necessary for agriculture, fire-fighting, and other operations. Its passenger turnover will grow at the fastest rates--approximately by 1.3 times. It is planned for there to be an extensive commissioning of new passenger airplanes of the IL-86 type, of the 120-seat short-range mainline YAK-42, IL-76 heavy freight airplane with a capacity of 35-40 tons, and airplanes of other new types to replace the TU-154 and TU-134 which are being decommissioned at the end of the 11th Five-Year Plan, and to expand the helicopter pool. It is planned to complete work on the creation and to begin the introduction of a new generation of airplanes and helicopters with improved technical and economic characteristics which will make it possible to decrease fuel expenditures and which are in accord with the requirements of environmental protection. It is planned to substantially improve the on-board and land automated air traffic control and take off and landing control systems.

The capital investments which have been designated for the development of air transport should ensure in the years 1981-1985 the commissioning of not less than 10 take-off and landing strips at large airports and not less than 46 at local airports.

A substantial development of the material and technical base of maritime transport is also planned for the 11th Five-Year Plan. It is planned to supply the fleet with new ships with a total deadweight of more than 3.2 million tons--container carriers, rolters, timber carriers, packet carriers, lighter carriers, and railroad and car and passenger ferries, and ice cutter-transport ships. Thanks to reequipping, reconstruction, expansion, and the construction of transshipment machinery complexes, the capacity of seaports will increase by 22 millions tons. Basically, this applies to the ports Vostochnyy, Vladivostok, Magadan, Tiksi, Yuzhnyy, Novorossiysk, Zhdanov, and Leningrad. Ship repair enterprises and fleet technical services bases will be developed. As in the past, the basic task of the

maritime fleet remains providing for export-import and coastwise shipments and exporting transportation services. A task has been set for the 11th Five-Year Plan--to organize year-round navigation in the Western Sector of the Arctic, including work on Dudinka and the eastern coast of the Yamal Peninsula.

But not only the development of the material and technical base has to ensure an increase in the volume of shipments. An intensification of the use of existing and newly created fixed capital--this is the chief goal of the workers of transport. The primary path for its attainment is a rise in labor productivity.

A highly important task is to decrease non-productive idle time by ships in ports and on ballast runs which in 1980 came to more than 39 percent for the tanker fleet and 21 percent for the dry-cargo fleet.

An economy of fuel whose specific expenditure is supposed to decrease in 1985 by 3.4 percent of the actual 1980 level is of very great importance. An increase in the work loads of ships on every run and a struggle for an economy of material and technical supplies have to become the motto of every crew. Steamship companies have to disseminate more widely the advanced work experience of the Leningrad Transportation Center. A creative approach, the extensive dissemination of advanced methods and of socialist competition, and the use of the achievements of scientific and technological progress are a pledge of the achievement of the highest final results and of the successful implementation of the historic decisions of the 26th CPSU Congress.

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## MISCELLANEOUS

### MOTOR VEHICLE, RAILROAD INEFFICIENCY IN DELIVERING HARVEST

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Sep 81 p 2

[Staff correspondents' reports on the harvest: "For Every Loss--A Guilty Person--a Spot Check by SOTSIALISTICHESKAYA INDUSTRIYA"]

[Excerpt] These are hectic days on the fields and the orchards. In Kazakhstan, Western Siberia and several other regions of the country they are harvesting and transporting the grain. The harvesting of vegetables and fruits is in full swing. They have begun to harvest the grapes and the cotton harvest is approaching. Transporting, storing, and processing the gifts of the land require an enormous amount of intensive labor. The responsibility for it rests primarily on the shoulders of the farmers. But the fate of the harvest is not dependent only on them. A great deal is being done and still needs to be done by the workers of industry and transport.

Our newspaper has already described the interesting undertaking of the mine imeni V. I. Lenin in the Krivbass [Krivoy Rog Iron Ore Basin], where they have set up a permanent brigade of mechanics to help the village. We have also described the work of the collective of the Gor'kiy association of the canning, vegetable and drying industry, which found a way to expedite the processing of the vegetables. This and many other good undertakings of the townspeople.

And how has the harvest fared today in this time of most intense activity? We asked our correspondents V. Berezhnaya, D. Melikov and P. Laptev to visit the fields, the transport lines, and the shops of the canneries.

Here are their reports.

Kurgal'dzhinskiy Rayon, Tselinogradskaya Oblast.

The grain going from the threshing floor to the elevator is here being transported by the drivers of the Tselinograd Motor Vehicle Combine. There is a line at the dispatcher's window. It is not moving: an argument is taking place.



"Bear in mind I cannot load in Kembidaik. The loader there will not reach the KamAZ vehicle body," driver Viktor Zobkov says heatedly.

It's no use. Dispatcher Galina Pyatkovskaya hands him a pass to Kembidaik. Despite his protests, Oleg Teslya is also sent there. Your correspondent followed up on the trip of both drivers.

In accordance with the trip voucher, V. Zobkov drove to Kembidaik, to the central farmstead. It turned out that there was no grain there. The person in charge of the threshing floor advised him to go to the fourth brigade; there should be grain there, he said. He went. There was grain there but no machine operators, no one to load it. He ventured a trip to a neighboring sovkhos. And it was all in vain. He had traveled 100 kilometers to no purpose.

O. Teslya decided to disregard the dispatcher's instructions and went, not to Kembidaik, but to the Aryktinskiy sovkhos. He went to the threshing floor and to the fourth brigade and decided that he would haul the grain. There were 15 piles of grain there. But his joy turned out to be premature. It was revealed that for two days the automatic scales in the organization had not been operative. Moreover, the old mechanisms on the threshing floor break down frequently and cannot clean the grain.

In short, Teslya left the place with an empty vehicle and went to try his luck at a neighboring organization.

What do these two examples tell us? Primarily that the people in charge of the motor vehicle combine have done a poor job of organizing the transport work. There is no permanent dispatcher group and no well-organized system for communicating with the organizations. The transport workers are not getting complete information as to what sovkhos and what brigade has grain and as to where they were ready for loading. As a result, machines are idle for hours on the threshing floors in some organizations while in others the harvested crop lies around for days and weeks waiting for shipment to the elevator.

Why do the trip vouchers issued to the drivers turn out in fact to be empty pieces of paper? Your correspondent put this question to F. Pflyug, the chief of a column of the Tselinograd Motor Vehicle Combine.

"They are supposed to send us their requisitions for motor vehicles every day," he said. "But at the beginning of the harvest they are in no hurry to turn the grain over to the state. The requisitions do not come in to us and the vehicles allotted for the shipment of grain stand idle or go out empty."

What a lame explanation! And who is supposed to organize firm businesslike relations with the workers of agriculture? Primarily the motor vehicle operators themselves. Among the Tselinogradskaya Oblast transport workers only in Astrakhanskiy Rayon do they provide a convincing example of this. The people there were the first in the country to introduce at the elevator an hourly schedule for the delivery of grain. From that time on the drivers have not had to stand in line. This year they set up a rayon headquarters for effective use of the transport. The requisitions for vehicles come in there from all the sovkhoses. On the basis

of these requisitions the dispatcher group also compiles a schedule for the delivery of grain from the various farm organizations. This is an excellent job. The newspaper SOTSIALISTICHESKAYA INDUSTRIYA has publicized it. Many oblasts of the country have emulated it. But in its own oblast, Tselinogradskaya, it is not getting widespread dissemination.

In the period of the harvest an important role is assigned not only to motor vehicle transport but also to railroad transport. The workers of the steel lines have done a great deal to provide for shipment of the new crop in time and without losses. But by no means everything has been done to make sure that the products are not lost.

Station Khachmas. There were many trucks and trailers loaded with vegetables. They stood one behind the other alongside the empty dimly lit tracks. And no one knew when the refrigerator cars would finally appear and loading begin.

But the railroad cars did show up. At the station everything got in motion--the people and the vehicles. The signal lights began blinking. There was a loud shout and a locomotive with a battery of refrigerator cars clattered along the tracks and came to a stop. The doors of the first car opened quickly, then the second and the third. But the loading did not ensue. It was not possible to go into the first refrigerator car because of the overpowering fish odor. In the second car the walls and floor were covered with a thick coat of mineral fertilizers. The third car lacked anhydride and without it, as we know, it is not possible to send vegetables and fruits on a distant trip.

A siren was turned on from the station yard and a fire truck rolled up to the first car. The firemen got busy cleaning the car.

When the loading finally began the day had given way to night and large drops of rain began tapping on the roofs of the cars. The damp products could not be loaded into the cars.

The story we have told took place at station Khachmas in a large vegetable region of Azerbaijan. However, approximately the same picture could be seen in another rayon--Astarinskiy. And the fire trucks are standing by at the station.

"The 'services' of the railroad are not limited to these facts," says A. Mamedov, the state inspection chief of the Ministry of the Fruit and Vegetable Industry and L. Zarembo, the chief of the legal division. One after the other on the desk were the claims of the vegetable farmers against the railroad officials, legally registered and turned over to the State Arbitration Board.

Thus, the Khachmas agroindustrial association shipped to their customers 44 cars with heads of white cabbage. They arrived at their destination very late. The result was spoilage of nearly 21,000 rubles worth of the product. The quality of the other vegetables shipped to Tula, Kuybyshev, Belgorod and Moscow Oblast fell off by 18-20 percent.

The conclusion to be drawn from this is that the Ministry of Railways is doing a poor job of monitoring the work of the railroads and their branch lines in the matter of shipment of the harvest.

Many of the fruits and vegetables of the new harvest are used in fresh form. They are loaded directly from the field or the orchard on to trucks, trains and sometimes even planes and delivered to various regions of the country. But a large portion of the fruits must be processed and put into long-term storage for the winter. And the workers of the canned goods plants and combines have to do a great deal there.

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## MISCELLANEOUS

### RAILROAD CAR PARK AT NOVOROSSIYSK MARITIME PORT

Moscow GUDOK in Russian 27 Aug 81 p 3

[Article by GUDOK correspondent S. Makarov, Novorossiysk: "Looking after the National Railroad Car Property--Measures and Reality--Notes from the Network School."]

[Text] The struggle for conservation of the rolling stock has been waged for a long time. Some measures of this kind were adopted in the recent period to curtail the increase of damages to the cars. An institute of inspectors was organized for the conservation of the rolling stock inventory and the organs of the public prosecutor's office were enlisted in the struggle against careless economic administrators. The people's control committees are constantly focusing a great deal of attention on this very important matter.

Recently completed was a network inspection "For conservation of the railroad cars"--another measure undertaken to improve the use of the loading resources. And what are the results? Still a long way from what we expected. This is the subject of the ongoing study in the network school for the safeguarding of the rolling stock now stationed in Novorossiysk. Participating in the work were the railroad personnel, seamen, workers of the prosecutor's office, and representatives of the party and trade-union organizations.

Unfortunately, the measures taken to induce the people to exercise a greater regard for the rolling stock have still not produced any appreciable result.

"Last year," said Deputy Chief of the Main Administration of Railroad Car Management P. Yemanakov in his report, "damages were inflicted on more than 70,000 cars and 1,100 refrigerator sections and ARV / autonomous refrigerator cars/. And more than 50,000 "large" ones are now laid up waiting for repair."

These reserves for increasing the loading resources are going to waste!

Where are these reserves concealed? Primarily in the sorting stations. How often are their tracks still littered with railroad car parts which were discarded after being detached from trains moving with increased speed. Especially alarming is the



damage to the refrigerator car portion of the rolling stock. On the average, repair of a damaged unit costs a thousand rubles. Most frequent occurrences of malfunctioning of refrigerator cars are on the Oktyabr', Sverdlovsk, Moscow, Southeast, Northern, Odessa, North Caucasus, Volga and Far Eastern railroads.

The railroad transport commanders are not devoting the necessary attention to the safeguarding of the rolling stock. For example, it was determined by some checks made that the chiefs of the Rostov, Ruzayevka, Likhovka, Belgorod, Chimkent and some other branches are not only not personally monitoring the status of the safeguarding of rolling stock but are sometimes even helping to keep the data on damaged cars from the records.

As before, the many of the cars are damaged while in use by the customers. But when this happens, unlike the railroad transport enterprises, they employ more effective measures to cut down the amount of damages to railroad cars. The Novorossiysk maritime port, one of the largest in the country, may be taken as an example of this. Whereas 664 cars were damaged there in 1976, the number in the first six months of the current year is only 126.

"Analysis," said the deputy chief of the port, V. Zakharchenko, "showed that 85 percent of the cars are damaged in freight operations involving unpressed metal, of which we process about 300,000 tons a year.

In recent years the port has introduced the so-called "standard of quality." This means that at the end of a shift the deputy chiefs of the warehouses make a notation on the work order of the dockworker crew as to whether any damages had been sustained by the rolling stock. If there are no such comments, the entire crew receives a bonus at the end of the month and the crane operator receives additional remuneration in the amount of 30 rubles. Consideration for the cars must without fail be taken into account when the results of the competition are compiled.

The enterprise also has a well-equipped point for reconditioning of the "large" cars.

"Working among us," says a foreman in Malyy, "are six persons--a welder, a carpenter and fitters. They have all gone through the minimum technical training at the railroad car depot, have passed the exams and have been certified for body shop repairs."

The collective of the depot assisted the port workers in establishing the prescribed minimum reserve of materials and parts. The effectiveness of this point is so great that it has impelled the need to establish another point of this type in the eastern area of the port. And, as the chief of the Novorossiysk car depot pointed out in the classes of the school, similar points are being organized at the Novorossiysk cement combine and at the shale plant Kommunar.

As we know, the grab bucket is the most crucial "tool" for the railroad cars. If the crane is equipped with it, it is practically impossible to avoid damages to the rolling stock. Novorossiysk station chief B. Klesov, who spoke at the meeting, described the work of the combined council which has been established to provide for the safety of the railroad car fleet. The council includes railroad workers

and representatives of the freight shippers and recipients. At the request of this council, the grab buckets were eliminated from the work. The cars are now unloaded by the gravitation method.

The experience of the Novorossiysk people provided additional confirmation of the fact that recruiting the broad masses in the struggle for the safety of the cars can produce appreciable results. Unfortunately, the participants in the school have often had to hear otherwise.

For example, at the ports which are served by the Far East Railroad there has lately been a considerable increase in the number of damages to cars and containers. For a long time the seamen and the railroad workers there have been unable to find a common language. One of the reasons for this is the fact that the port workers pay fines only for damage to the rolling stock but they do not make reimbursement for the cost of its repair.

The public prosecutor organs are providing help in the struggle for a careful regard for the rolling stock. Assistant General Prosecutor of USSR I. Shchukin spoke at the school. He told how supervisors of various ranks have been charged with responsibility for damages to rolling stock. Thus, the director of the Artem agricultural construction combine and his deputy were fined 610 rubles. Four shop chiefs of the Nizhnetagil Metallurgical Combine were fined 1,682 rubles. Last year, more than 13,000 court actions were brought against people responsible for damages to cars and more than 700 monetary losses were assessed.

Thus, it was confirmed in the school that for the time being the measures taken to provide for the safety of the rolling stock are producing a great effect in the industrial enterprises. For the railroad workers a careful regard for the railroad cars has still not become an immutable law and they are not perceiving it as a task of first-priority importance.

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## MISCELLANEOUS

### BRIEFS

PREPARATIONS IN ANTARCTICA--The first tracks of a sled-caterpillar train were imprinted on the ice cover of Antarctica that was sparkling under the spring sun. The director of the "Mirnyy" Observatory, N. K. Dmitriyev, reported yesterday that the trial run of heavy tractors with trailers was successfully completed along the route "Mirnyy"--100km--"Mirnyy". At the finish line, sleds with fuel supplies were left for the upcoming inter-continental trip to the "Vostok" Observatory. The train of 17 tractors will have to deliver to the belt of cold, some 1500 km from shore, the necessary supplies and drilling rigs to continue the core-drilling through the white cap. The upcoming trip will make possible a series of scientific journeys into the inner regions of the sixth continent which are planned for the upcoming research season. Geophysicists, glaciologists, and radio physicists will be dispatched along the distant routes on the sled tractor trains. One of the routes, in particular, will run to the so-called "Kupol-Ts" in the region of the geomagnetic pole. [Text] [Leningrad LENINGRADSKAYA PRAVDA in Russian 9 Oct 81 p 1]

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